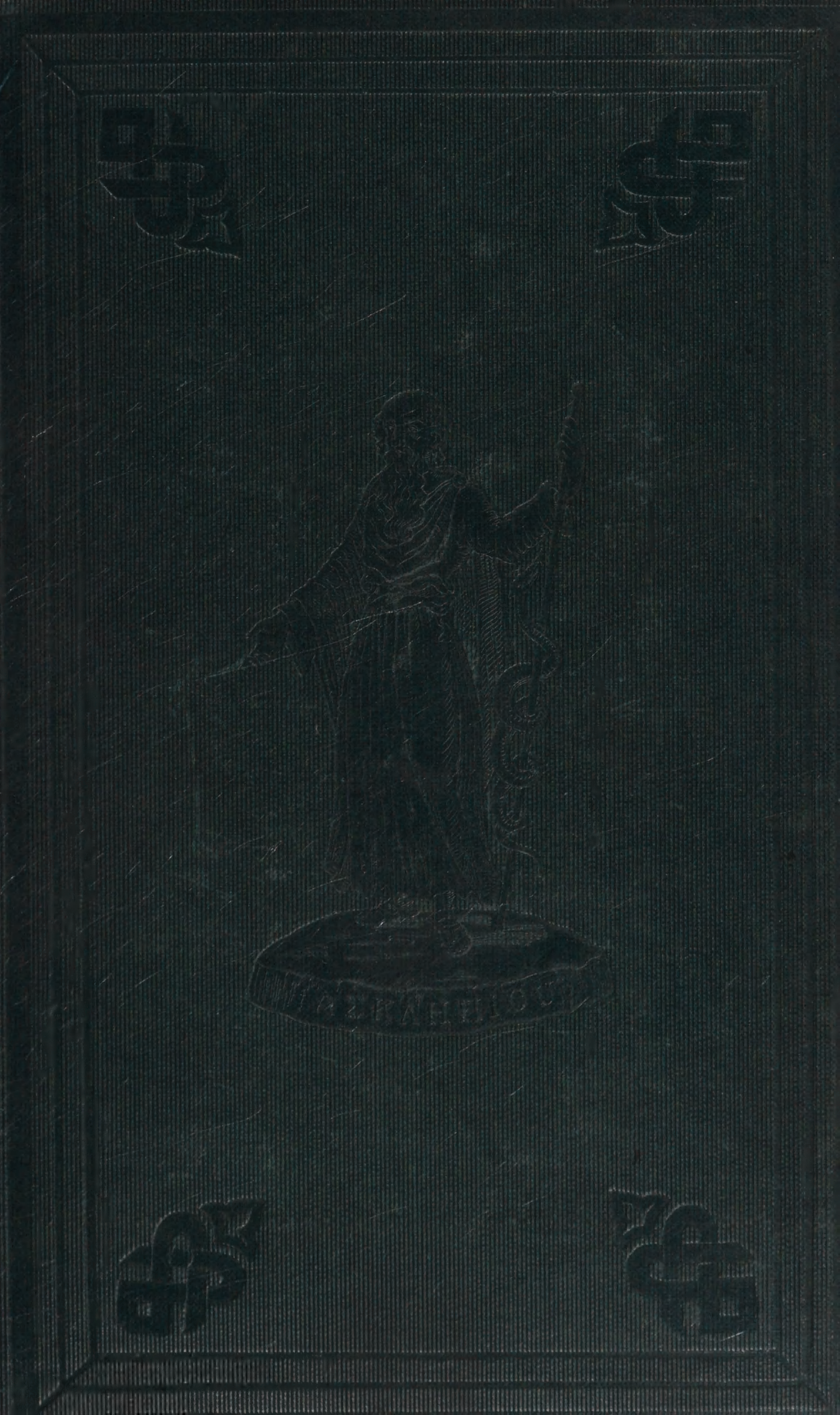

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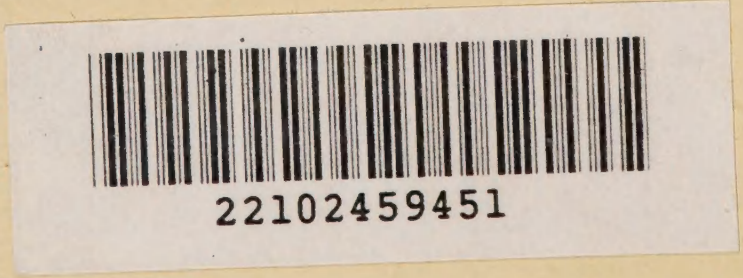

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HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES.

JULY—DECEMBER,

1857.

PRINTED BY J. E. ADLARD, BARTHOLOMEW CLOSE.

THE

HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES:

BEING

A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED IN THE PRECEDING SIX MONTHS:

TOGETHER WITH A

SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES DURING THE SAME PERIOD.

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Apparatu nobis opus est, et rebus exquisitis undique et collectis, arcessitis, comportatis.
Cicero.

VOL. XXVI.

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HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

&c. &c.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

(A) HYGIENE.

ART. 1.—*A new method of investigating the effect of Meteorological Changes upon Human Life.* By Dr. JAMES MORRIS.

(*Lancet*, July 18, 1857.)

BEFORE entering into the details of the present investigation, it is necessary to present a few general considerations in elucidation of the method actually employed, which may, perhaps, be called the "Method of Differences." Let the total mortality of London be compared to the depth of water in the sea; this we may regard as influenced by various causes, but of these the most important are of a permanent character, such as habitations, food, air, soil, level, moral condition, &c.; while the effect of occasional or cyclical conditions—as cold, heat, wind, rain, moisture, drought, &c.—may be likened to the tides and waves on the surface, high or low, gentle or tempestuous, but never affecting permanently the depth of water. Waves and tides cannot be studied by observations on the mean depth of the ocean, neither can the effect of meteorological phenomena on mortality be estimated by the comparison of mean quantities. It was to study these tides and waves affecting the surface of the mortality, that Dr. Morris constructed three years ago the tables, to give an account of which is the object of this paper.

As in physics, when a moveable body is acted on by various forces, each produces its own effect independently of the others, and however complicated be the path of the moving body, yet is the effect of each

force precisely in accordance with known laws; so, although the causes determining the amount of mortality may be very numerous and recondite, yet the effect of each should be exerted in accordance with laws not the less absolute because they are less known. The causes of the rise and fall of the wave of death, doubtless at times exhibit a combined effect, at times neutralize each other by acting in opposite directions; but as a cause constantly produces its own effect, whether that effect be neutralized or not, we should, in order to discover the amount of effect due to any special cause, note the apparent effect following that cause on a large number of occasions, and the mean of these will be the quantity of its real effect. If the scale of our calculations be sufficiently extensive, disturbing causes will neutralize one another.

Taking the weekly tables of the Registrar-general, it would be possible, by noting the number of deaths occurring in a large number of weeks, each following some given meteorological condition, and comparing the mean of the numbers so obtained with the average mortality, to arrive at an approximation to the effect produced by the given condition; but, except in the case of diseases, which contribute but a very small proportion to the weekly mortality, and where the smallness of the numbers makes the results of less value, the figures to be dealt with soon become so unwieldy, and the corrections necessary on account of increase of population so difficult, as to afford a ready explanation of the fact, that no calculations of the kind have been made. In order to obtain intelligible and trustworthy results, it is necessary to extend our basis over a lengthened period; but it is not enough to set down side by side the mean mortality and the mean meteorological condition, and, although in this way results of some value have been, and may be obtained, still for most purposes more is required. The long period must be divided into portions, the smaller and more numerous the better; the meteorology and mortality of each must be registered; such data we have in the weekly returns. Now, in tables of this nature, any effect produced can only be exhibited in the form either of an increase or a diminution of the weekly mortality. Let us then tabulate these changes occurring in the mortality from week to week, denoting increase by the sign +, and diminution by the sign −. Resuming our metaphor, these numbers, with their signs prefixed, denote the rise and fall of the death-wave, the depth of the water, the actual mortality, being left out of account. Let us classify the weeks according to some meteorological character, when simple algebraic addition immediately offers us the means of combining the effects produced, divide the result by the number of weeks in which our previously selected condition has occurred, and, if the basis of our calculations be wide enough, the quotient will indicate the amount of the effect produced, while its sign will indicate its kind.

By this method no comparison is ever instituted, except between weeks which are in immediate succession; and the correction for increase of population, which would otherwise be very troublesome, becomes a simple matter. The following tables have been extended over a period of fourteen years, 1840—1853 inclusive, containing 730 weeks; they have reference only to the effect produced by continued

temperature, and by changes of temperature upon the total mortality. Those showing the effect of the same agents upon the zymotic class and its members have been completed for the same period; the field is very extensive, and but a little corner of it has as yet been occupied. For brevity's sake, let us call the increase or diminution of mortality from week to week the "death-change." It will be evident, after a moment's reflection on the subject, that the continuance of a certain temperature, for instance, may produce an effect upon the mortality which will not all be exhibited in the death-change which immediately succeeds it, but may be spread over the succeeding death-changes for a very considerable period; and hence it has been necessary to take account of the fluctuations of mortality through a period of four weeks, and even then the tables show, in many cases, that the whole of the effect has not passed away; but it is now desirable to postpone further explanations, and to submit the first table of results, in which the calculation has not reached its final and more intelligible stage, which follows below:

Table showing the effect upon the total mortality of London caused by various temperatures.

Weekly mean temperature.	Number of occurrences.	First death change.	Second death change.	Third death change.	Fourth death change.	Remaining excess or defect of mortality after four weeks.
20° to 25°	1	+ 69	— 131	— 22	— 181	— 265
25 „ 30	13	+ 704	— 338	— 980	— 781	—1395
30 „ 35	38	+1805	— 614	—1734	— 185	— 728
35 „ 40	77	+2851	—1595	— 326	—1140	— 210
40 „ 45	123	— 411	+1359	+ 436	—1275	+ 109
45 „ 50	138	—2980	— 900	+1196	+ 261	—2423
50 „ 55	89	—1341	+1250	+ 900	+2873	+3682
55 „ 60	130	—1818	— 557	+ 604	+1227	— 544
60 „ 65	100	+1047	+1526	— 474	— 774	+1325
65 „ 70	19	+ 742	+ 445	+ 517	+ 124	+1835
70 „ 75	2	— 198	+ 50	+ 162	+ 194	+ 208
		+ 477	+ 495	+ 279	+ 343	+1594

The first column contains merely a division of the weekly mean temperatures into fasciculi of five degrees (Fahrenheit), an arrangement adopted merely from motives of convenience. In the second column stands the number of weeks whose mean temperature falls in each fasciculus; and here, in passing, we may notice a curious fact, that the mean temperatures of fewer weeks fall between 50° and 55° than in either of the two preceding or the two succeeding fasciculi. This would seem to be due to the rapid approach of the sun about the time of the vernal equinox, and his correspondingly rapid departure at the autumnal, dependent on the form of the ecliptic, and the great

angle which it makes with the equator at the points of intersection. The third column is occupied by numbers formed by combining, by algebraic addition, the death-changes occurring at the termination of all the weeks which form the fasciculus to which they belong. In order to find the effect to be expected in any single week, these numbers must be divided by the corresponding number in the previous column. In order, however, to avoid fractions, and on account of the magnitude of disturbing causes—as, for instance, cholera, influenza, and the irregular registration of inquests—it has appeared desirable to leave this table in its present form. The fourth, fifth, and sixth columns contain the combined death-changes occurring exactly one week later than those in the column immediately preceding each of them. The last column is formed by addition of the numbers on the same line in the four previous columns. It shows whether and by how much the mortality of the whole four weeks was above or below that of the weeks which formed in each line our starting point. In such a table, a steady increase of mortality during the period which forms the basis of our calculation, whether it be due to augmented population or to any other cause, shows itself in an excess distributed among the positive quantities, and a defect among the negative; in the third, fourth, fifth, and sixth columns the numbers whose sign is + are together greater than they should be by about 200, while those whose sign is — are deficient to the same extent. The exact amount of this error is shown by the number at the base of each column. In the last column the same fault occurs to a fourfold extent, the error here being the sum of the other four.

So far it has been necessary to enter into a somewhat tedious explanation of the method of procedure employed, which, however, has been rendered as brief as possible. Before proceeding to interpret the results, it only remains to add, that at every step the calculations have been subjected to such proofs as almost to preclude the possibility of arithmetical errors. After applying the correction just referred to, for increasing population, the mean results may, I think, be most intelligibly stated as follow, fractions being rejected, and the nearest whole numbers adopted.

I. As calculated upon an average of 129 weeks (see the first four lines of the previous table), the effect due to a mean weekly temperature below 40° is to increase the total mortality of London in the following week by 41, at the termination of which a diminution of 22 occurs, still leaving, however, an excess of 19. At the end of this second week a further diminution of 25 occurs, thus bringing the deaths 6 below the average of those which formed our starting point. Another week shows a further depression of the mortality by 19, leaving, where our calculations cease, a deficiency of 25 during the period elapsed.

II. An examination of 480 weeks (see fifth, sixth, seventh, and eighth lines of table), having a mean temperature of from 40° to 60°, together with a comparison with and among their successors, shows that the first effect of such moderate temperature is to diminish the weekly mortality by 14; three weeks later this deficiency is a little more than made up.

III. The effect of high temperature may be judged of from the results following 121 weeks, having a mean temperature of 60° and upwards (see last three lines of table). An average increase of 11 occurred in the mortality of the following week, in the next a further increase of 14, after which the effect began to die away, leaving, however, where the calculations terminate, an excess of 22.

A short table, which will be readily understood by those who have read the foregoing with attention, will enable the eye to take in the above results at a glance:

Base of calculation.	Mean temperature.	First death change.	Second death change.	Third death change.	Fourth death change.	Remaining effect.
129 weeks.	Below 40°	+41	—22	—25	—19	—25
480 weeks.	40° to 60°	—14	+ 2	6	+ 7	+ 1
121 weeks.	60° and upwards	+11	+14	+ 1	— 4	+22

Before proceeding to comment on these results, let us add the following:

Table showing the effect produced upon the total mortality of London by rise and fall of temperature.

Changes of the weekly mean temperature.	Number of occurrences.	Death changes occurring simultaneously.	Death changes after one week.	Death changes after two weeks.	Death changes after three weeks.	Death changes after four weeks.	Excess or defect of mortality, after four weeks.
+16° to +18°	1	+ 106	— 209	— 36	+ 18	+ 88	— 33
+14 „ +16	1	— 9	— 238	— 44	+ 22	— 24	— 293
+12 „ +14	2	— 124	— 247	+ 12	— 93	— 33	— 485
+10 „ +12	9	+ 698	—1039	— 509	+ 16	— 66	— 900
+ 8 „ +10	26	+1361	—2239	+ 513	— 233	— 449	—1047
+ 6 „ + 8	37	+ 708	—1263	— 817	+1130	+ 56	— 186
+ 4 „ + 6	61	+ 485	— 433	— 668	— 744	+ 34	— 460
+ 2 „ + 4	101	+ 381	—2085	+1753	— 511	+1089	+ 627
0 „ + 2	116	+2941	—2633	+ 25	—1271	+ 119	— 819
0 „ — 2	136	—1203	+1419	— 76	+1482	— 46	+1576
— 2 „ — 4	99	—2072	+1891	—1133	+ 870	— 166	— 610
— 4 „ — 6	72	— 899	+2326	— 89	— 87	+1353	+1604
— 6 „ — 8	43	— 154	+1081	+ 911	+ 171	— 333	+1676
— 8 „ —10	17	— 585	+1613	+1229	— 689	— 281	+1287
—10 „ —12	5	— 964	+ 920	— 548	+ 11	— 89	— 670
—12 „ —14	4	— 193	+ 765	— 244	+ 251	+ 134	+ 713
		+ 477	+ 495	+ 279	+ 343	+ 386	+1980

In the first column we have a classification of the changes occurring in the mean temperature from week to week; increase (denoted by the sign +) forming the upper part of it, and diminution (as indicated by the sign —) the lower; they are divided arbitrarily, for convenience' sake, into fasciculi, each embracing two degrees of increase or diminution of temperature. The second column shows the number comprised in each fasciculus, 730 in all. The other columns are exactly analogous to those in the previous table, with this difference, that the first of them (third column), is formed from death-changes exactly simultaneous with the heat-changes noted in the first column. The numbers denoting the correction required for population stand below.

Let us endeavour to state the chief results in a more easily intelligible form, applying the correction, and reducing as before, thus:

Number of changes of weekly mean temperature.	Average amount of ditto.	Death changes occurring simultaneously.	Death changes after one week.	Death changes after two weeks.	Death changes after three weeks.	Death changes after four weeks.	Remaining effect.
354	+3°·88	+18	—27	...	—5	+1	—13
376	—3°·65	—17	+26	...	+5	—1	+13

Or, more expanded, as follows:

Number of changes of weekly mean temperature.	Average amount of ditto.	Death changes occurring simultaneously.	Death changes after one week.	Death changes after two weeks.	Death changes after three weeks.	Death changes after four weeks.	Remaining effect.
137	+6°·97	+23	—36	—12	+1	—3	—27
217	+1°·93	+15	—22	+ 8	—9	+4	— 4
235	—1°·84	—16	+15	— 5	+9	—1	+ 2
141	—6°·67	—21	+47	+ 8	—3	—2	+29

The above conclusions may be verbally stated thus:

I. That on 354 occasions on which the mean temperature of some weeks exceeded that of its immediate predecessor, the average amount of such excess being 3°·88, the mean result was as follows: that there occurred, simultaneously with the increase of temperature, an increase in the deaths to the extent of 18; after one week, this was more than counterbalanced by a decrease of 27, which was maintained, and even somewhat increased, leaving, after the lapse of four entire weeks, the mortality still 13 below the level at the beginning.

II. That on 376 occasions on which the mean temperature of a week was less than that of its predecessor by an average amount of 3°·65, the total mortality underwent simultaneously a diminution of 17; that

after one week an increase of 26 occurred, leaving the mortality 9 above the average; that at the termination of four weeks this excess amounted to 13.

III. In the second table we see that the greater changes of temperature are, as might be expected, followed by a greater effect, and not only so, but it is also continued over a larger number of weeks. Thus 141 falls of the weekly mean temperature, averaging 6°·67, were causing on an average, after the lapse of four entire weeks, an excess of 29 in the weekly mortality; while, on the other hand, 137 rises, averaging 6°·97′, were producing a corresponding favorable effect.

The above numbers, being but approximations, may be regarded as expressing the augmentation or decrease caused upon every 1000 deaths, since the mean mortality of the whole 730 weeks but little exceeds 1000 (being exactly 1012·47).

The first series of tables should enforce upon us the necessity of preserving a medium and steady temperature in the rooms of the sick and feeble, where a thermometer is not yet so common an appendage as it ought to be. Be it remarked, that it is not the low temperatures alone which are to be dreaded, though the immediate fatality which they produce is very great; but high temperature is seen to be even more pernicious, though the evils resulting from it have in some measure escaped attention, from the fact that they are diffused over a longer interval of time. Let us not fail to observe that after three, and still more after four weeks, the balance is greatly in favour of the low, as compared with the high, and even with the moderate temperatures.

It is a curious result of the second division of our calculations, that the first effect of a rise or fall of temperature, viz., that which occurs simultaneously with it, seems to be exactly the reverse of that which has been generally believed, it may be for want of sufficient care in distinguishing between high temperature and rising temperature, and low temperature and falling temperature respectively; or, as deaths are not registered till three or four days on an average after their occurrence, this may account in part for the result—scarcely for the whole. To decide this matter would require a registration of deaths on the days to which they belong, to which calculations on this principle might be very advantageously applied. Still the chief effect of comparative cold remains as generally believed.

Art. 2.—*On Adulteration of Bread as a cause of Rickets.* By Dr. Snow.

(*Lancet*, July 4, 1857.)

"In 1839, having occasion to see a considerable amount of practice amongst the poor of London," says Dr. Snow, in a paper to which we would wish to direct especial attention, "I was very much struck with the great number of cases of rickets. The complaint was shown chiefly in the bones of the leg, causing an outward curvature of the tibia and fibula; in children in their second and third year, it seemed almost the rule, and might be observed in the streets and the parks, as well as amongst children brought for advice. The complaint,

moreover, was not by any means confined to the poor, but affected the children of the middle classes to a considerable extent.

"The usual causes to which rickets are attributed are of a somewhat general nature, such as vitiated air, want of exercise and nourishing food, and a scrofulous taint. These explanations, however, did not satisfy me, as I had previously seen a good deal of practice in some of the towns in the north of England, where the overcrowding and the other evils above mentioned were as great as in London, whilst the distortion of the legs in young children was hardly present; moreover, I noticed that the most healthy-looking and best-nourished children often suffered most from curvature of the bones of the legs, owing to their greater weight; and I afterwards found that this complaint was quite common in the villages around London as well as in the metropolis itself.

"The bones owe their hardness to phosphate of lime, which exists ready formed in many articles of food, and only requires to be assimilated, whilst in rickets the phosphate of lime in the bones is known to be deficient; and therefore it seemed extremely probable that the want of this earthy salt in the food of the infants of this metropolis was the chief cause of the soft state of the bones. My attention was naturally directed to milk, which contains one chief supply of phosphate of lime, and which is somewhat scarce and dear, and not of the best quality in London; but I immediately recollected that in some of the mining and manufacturing districts in the northern counties of England milk was scarcely used at all in the families of the operatives, and yet I had hardly seen a case of curvature of the legs from rickets. On reflecting on the subject of bread, however, there seemed to be something which might explain the prevalence of this complaint in London. In the northern counties, where coals are cheap, it was the universal custom for every family to bake their own bread, and I believe still remains so; whilst in the south of England it is as much the custom to buy bread from the baker. Now, the bakers, so far as I have examined, all put alum in their bread, whilst this is never done in domestic practice, and the flour dealers rarely adulterate the flour with this substance. They are liable to a heavy penalty for adulterating flour, but the law is never enforced against the bakers. I have never examined a specimen of flour which contained alum, or a specimen of baker's bread which did not contain it.

"When my attention was first turned to the subject of rickets, I thought it likely that the sulphuric acid of the alum would decompose the phosphate of lime of the wheat, and form sulphate of lime, which would not be available as nourishment for the bones; and I formed an intention to investigate the question both chemically and statistically; but this intention was long postponed, on account of other engagements and inquiries. In the meantime, and without any regard to the question of rickets, Liebig has inquired into the action of alum in bread, and his investigation will justly have more weight with the reader than any inquiry of mine. He says, 'Since phosphoric acid forms with alumina a compound hardly decomposable by alkalies or acids, this may perhaps explain the indigestibility of the London bakers' bread, which strikes all foreigners.'

"It is evident from the above passage that Liebig has ascertained that alum decomposes the phosphate of lime of wheat, and it is not likely that the bones would be able to nourish themselves with this salt out of phosphate of alumina and sulphate of lime; and where bakers' bread forms the chief and almost the only article of food, as it does amongst the children of the working classes in London and many other towns, one might expect the bones to be ill-nourished, as regards their earthy and hardening material. This appears to be the actual fact, as far as I have been able to extend my inquiries. The subject is capable of being decided by an exact numerical investigation, but I have thought it better to publish my inquiry in its present imperfect state, than to wait till I should be able to make such a complete research as I could wish, more especially as, by directing the attention of the profession to the question, it may be earlier decided. I expected to be able to contrast some of the large institutions containing young children in this metropolis with each other; but, so far as I have inquired, they are all supplied alike with bakers' bread containing alum. So far as I have been able to learn, rickets are not common at present in the towns in the north and west, where home-made bread is chiefly used; and I was lately told, that in one town in Cornwall, where the people make their own bread, this complaint is almost absent; whilst in a town a few miles off, where bakers' bread is consumed, the complaint is extremely common; but as my inquiries have been only of a colloquial nature, I hesitate to mention places and persons. If it could be obtained, perhaps a return of the number of cases of rickets in the children under four years, as compared with the whole number, which are brought to the dispensaries, in towns where respectively the people buy chiefly flour or ready-made bread, would best help to decide the question.

"It does not follow, if my conclusions are correct, that every child eating bread adulterated with alum ought to have rickets, or that every child fed with good bread ought to be free from the complaint; for, on the one hand, the other articles of food may often supply sufficient phosphate of lime without that of the bread, and, on the other hand, derangement of the digestive and urinary functions may prevent the phosphate of lime being assimilated when present. What we might expect, however, would be precisely what we observe—that rickets would be much more common in the children of the working classes fed almost entirely on bread than in those who have a greater variety of food. It can also be explained how the bones ultimately become hard from the gradual accumulation of the scanty supply of phosphate of lime derived from milk, potatoes, and other articles of food, whilst that which ought to be supplied in the bread is still withheld.

"If the deformity in the bones of the legs does not proceed too far, it has a great tendency to diminish, and even disappear, as the children grow up; and the artificial support which is afforded by iron instruments and splints, both in the various hospitals for deformities, and under the advice of private medical men in London, diminishes very much the amount of permanent deformity which would otherwise be met with.

"In my examinations of bakers' bread I have been much struck with the apparent universality of the practice of using alum, and with the large quantity employed—a quantity between twenty and thirty times as great as that usually stated by authors. I have met with alum, not only in the ordinary bread sold by bakers, but also in captains' biscuits, and in the so-called farm-house bread; and I was somewhat surprised to find that the high-priced bread, sold in the fashionable neighbourhood to the west of Regent Street contained more alum than the cheap bread sold in many of the poorer districts. I found that the bread supplied to me last autumn contained 10·13 grains of alum in 500 grains—*i. e.*, 561 grains, or more than an ounce and a quarter in the 4 lb. loaf; whilst some bread obtained from a very noted baker contained 11·37 grains in the 500 grains, or nearly an ounce and a half in the 4 lb. loaf. The following is a brief account of the analysis of the latter bread:—500 grains, being carefully dried at the temperature of 100 Fahr., lost 128 grains of water, or more than one fourth. Being carefully incinerated in a crucible, the ashes weighed 5·85 grains. The ashes yielded alumina, which, being washed, dried, and ignited, weighed 1·2 grain, representing 11·37 grains of crystallized alum; with chloride of barium, they yielded 1·4 grains of sulphate of baryta; and with the nitrate of silver, 6·7 grains of chloride of that metal, representing 2·8 grains of common salt.

"Dr. Hassall and some other authors have very properly pointed out that the only safe way to seek for alum is to incinerate the bread, and examine the ashes; but many writers go on repeating the statement that alum may be found by digesting the bread in distilled water, filtering, and applying tests to the water. In this way seldom more than a trace of alumina can be detected, even when the bread contains a large quantity; but it is probable that many persons take this short and easy method of examining it, and it is probably in a great measure owing to this circumstance that the bakers continue to use alum with so much impunity. An instance came under my notice not many months ago where a baker expected, with the utmost confidence, to have a satisfactory certificate to lay before the committee of a club-house respecting his bread, although it contained a great quantity of alum.

"A probable way to break through what seems the universal practice of bakers to adulterate bread, would be for the committees of the public hospitals and the guardians of the poor to oblige the bakers who contract to supply their respective institutions to furnish an unadulterated article. No one pretends that alum is either nutritious or wholesome; and if the loaves without alum should cost a little more, owing to their carrying less water, no one can doubt that as much nutriment would be obtained for a given sum as under the present system."

Art. 3.—*How to render Cows' Milk a more suitable Food for Children.* By Dr. Gumprecht, of Hamburgh.

(*Journal für Kinderkrankeiten*; and *Dublin Hosp. Gaz.*, Oct. 1, 1857.)

Dr. Gumprecht prefaces his observations by remarking upon the fact that milk often disagrees with children, producing indigestion, acidity, flatulence, colic, diarrhœa, &c., &c. In consequence of this, it has been proposed to improve it by the addition of water and sugar of milk, which experience has proved to have imperfectly attained the object in view. Reflecting on the effect of salt in rendering the food for adults not only more palatable, but also more digestible, increasing the activity of the glands of digestion, and rendering the albuminous substances and fat soluble in the fluids of the stomach, Dr. Gumprecht was led to the idea of adding salt to milk, both for weaned and older children, with the result of not only preventing the derangement of digestion, but moreover of removing them in cases where they previously existed. No author who has written on the nutriment of weaned children has spoken of this most useful addition to milk; but a Dutch physician mentioned to Dr. Gumprecht, in conversation, that in his practice in Holland he had frequently added a little salt to milk for weaned children with most satisfactory consequences.

In the rural districts of Holland, salt is frequently added to the fodder for pigs and cattle, for the purpose of preventing diarrhœa, which so often exists in consequence of imperfect digestion, and this suggested the adding salt to milk, not merely for healthy children, but for strumous children and such as are affected with worms. Dr. Gumprecht quotes a passage from L. Nussdorff's 'Lehrbuch der Gesundheitspflege,' 1856, on the importance of salt in the nutriment of man and animals.

With regard to the quantity of salt which should be added to the milk, it must depend on the age of the child. To render cow's milk like human milk, it should be boiled and skimmed, and a little sugar of milk and salt added.

Art. 4.—*The injurious effect of Narcotics upon Children.* By Dr. T. Herbert Barker.

(*Journal of Public Health*, Jan., 1857.)

These excellent remarks occur in a well-written paper on "Nursery Government in its Sanitary Aspects."

"When," says Dr. Barker, "the rules of infantine health are disregarded by mothers and nurses; when food wrong in quality or excessive in quantity is habitually given; when cleanliness, sufficient repose, gentle exercise and pure air have been neglected, we must expect the infant constitution to suffer. Irritation, wakefulness, a bloated or emaciated habit of body and peevishness of temper will probably appear as the results of such mismanagement. And now, as one error leads to another, the inexperienced mother or nurse, having

first produced disease, proceeds to exasperate that disease by the most mischievous quackery—in short by 'drugging' the infant. Its cries are distressing, it will not sleep; it is evidently suffering pain;—the pain must be allayed—the child must be put to sleep;—but what are the means to be used? Nature calls loudly for help and receives—poison! An ignorant neighbour informs the distressed mother of the wonderful virtues of a certain elixir—'Godfrey's Cordial,' 'Dalby's Carminative,' 'Poppy tea,' 'Diocodium and peppermint,' or some other cloak for opium. In one respect these destructive nostrums fulfil their promise. The cries of the child are effectually 'stilled;' for, in many cases, he is soon silent—in the grave! Let it not be thought that we write too strongly of this murderous practice. I have seen even in the course of my own experience in a rural district, too many instances of the injurious effects of narcotics upon children; but it is in the manufacturing districts that the practice of 'drugging' is carried on in a wholesale manner. On this sad topic the Registrar-general has written as follows:

"'How pitiful is the condition of many thousands of children born into the world! Here, in the most advanced nation in Europe, in one of the largest towns of England,—in the midst of a population unmatched for its energy, industry, and manufacturing skill—in Manchester—the centre of victorious agitation for commercial freedom—aspiring to literary culture—where Percival wrote and Dalton lived—thirteen thousand three hundred and sixty-two children perished in seven years, over and above the mortality natural to mankind! These 'little children,' brought up in unclean dwellings and impure streets, were left alone, long days. by their mothers to breathe the subtle sickly vapours—soothed by opium, a more 'cursed' distillation than 'hebenon,' and when assailed by mortal diseases—their stomachs torn, their bodies convulsed, their brains bewildered, left to die without medical aid, which, like hope, should 'come to all,'—the skilled medical man never being called in at all, or only summoned to witness the death and sanction the funeral.'*

"Such remarks, I trust, are only required by the most ignorant mothers and nurses in the lowest grades of society. Yet I beg leave to intimate that such drugs as those referred to, may sometimes be found in the possession of nurses in the higher classes of society. The mother who wishes her infant to grow up with 'a sound mind in a healthy body', cannot guard too strictly against the use of poisons."

* Ninth Annual Report of the Registrar-general of Birth, Deaths, and Marriages in England. 1849.

ART. 5.—*Revaccinations in the Prussian Army during* 1856. By DR. ——.

(*Berlin Med. Zeitung*, No. 14, 1857; and *Med. Times and Gazette*, June 6, 1857.)

During the year 1856 there were either vaccinated or re-vaccinated 44,222 individuals. Among these,

Cicatrices of prior vaccinations were plain in . .	36,668
The cicatrices were indistinct in . . .	5,157
There were no cicatrices in . . .	2,397
	44,222

The results of the present vaccinations were

Regular in	28,785
Irregular in	5,777
No effects in	9,660

The vaccination was repeated in the 9660; with effect in 2531, without effect in 7129.

The number of vesicles produced was as follows:

1 to 5 in	14,178
6 to 10 in	9,275
11 to 20 in	7,004
21 to 30 in	859

Among the soldiers revaccinated with success in 1856 or in former years, there occurred during 1856, 2 cases of varicella, 4 of varioloid, and 1 of variola.

Thus, of 44,222 persons vaccinated during 1856, in 28,785 (and including those vaccinated with success after a first failure, 31,316), the pustules pursued a completely regular course. That is to say, the vaccinations succeeded at the rate of 65 per cent., or, including the repetitions, 70 per cent. This proportion has of late been on the increase; for during the two immediately preceding years it was 63 per cent., or 69, including successful repetitions

Throughout the entire army during 1856 there occurred 21 cases, 5 being examples of varicella, 13 of varioloid, and 3 of true variola. Among the soldiers who had not been revaccinated, varicella occurred in 1, and varioloid in 6; among those who had been revaccinated, but without effect, there were 2 cases of varicella, 4 of varioloid, and 2 of variola; and among those revaccinated with success there occurred, as already stated, 2 cases of varicella, 4 of varioloid, and 1 of variola. No case throughout the entire army terminated fatally; and all the cases, with the exception of one, were very slight.

ART. 6.—*On the connexion of Atmospheric Vicissitudes with Epidemic Disease.* By Dr. F. POZNANSKI, of Wilna, Russia.

(*Dublin Hospital Gazette*, Sept. 15, 1857.)

Dr. Poznanski's paper was communicated to the section of Physio-

logical Science at the last meeting of the British Association. Its substance is contained in the following extract:

"The natural agents are salutary or noxious, according as they serve to confirm or annihilate the normal state of individuals. If modifications of natural agents, even those which are proper to the seasons, produce generally morbid predispositions, it is impossible for it to be otherwise, when the natural agents offer extraordinary modifications. In fact, whenever such modifications occur, there is a general predisposition to a special sort of illness. This predisposition —an intermediate state between health and sickness—is always in proportion to the degree of modification in the natural agents; and as its basis is a modification of the organic functions, it secures from other maladies, which require for their existence opposite modifications. It is for this reason that during, and even before an epidemic, we seldom meet with maladies of another kind. The morbid predisposition must, in every illness, necessarily offer peculiar pathognomonic signs. Unfortunately those signs which offer most interest, are only determined in some chronic maladies—and even then in a manner more or less vague. We know, for instance, some signs of the phthisical, apoplectic, scrophulous, &c., constitution, but no one has hitherto thought of determining the signs of predisposition proper to every acute malady, and principally to epidemic diseases. It was during the cholera epidemic of 1848 that I conceived the idea of making researches of this sort. Starting from this principle that circulation and respiration diminish under the influence of condensed air, and that during the cholera epidemic there prevails an excess of atmospheric pressure with its consequences, I undertook during the epidemic of 1848 and 1853, two series of observations, in order to determine the signs of imminence of cholera, or rather of epidemic predisposition. Of course, I directed my attention especially to the change of the pulse. These observations, carried out on both occasions on three hundred healthy persons at Wilna, in a prison, and at St. Petersburgh, on a regiment of the imperial guards, were repeated daily for several successive months, and furnished the following results:

"1st. During cholera epidemics, many individuals—although in the enjoyment of good health—are affected by a very striking diminution of the pulse, as low as 45, and even 42 pulsations in a minute. 2d. This diminution is not accompanied generally by any morbid symptoms or indication. 3d. In proportion to the diminution of the circulation, the blood becomes black and viscid, and, on the contrary, it remains normal during the epidemic amongst those individuals who are not affected by the diminution in question. 4th. The cases of cholera occur only with individuals previously affected with diminution of the circulation. 5th. The slackening of the pulse, which often precedes the choleraic symptoms for several weeks, may be considered as a pathognomonic sign of the imminence of cholera. 6th. The individuals who manifested signs of this imminence, have always avoided the attack of cholera, if they have accelerated the circulation of the blood by suitable treatment, regimen, &c. 7th. The slackening of the pulse as well as predisposition and choleraic attacks, have in general been proportioned to the defect of energy in the

circulation, and to the excess of atmospheric pressure. 8th. This slackening does not occur among the healthy when the epidemic has definitively ceased. In conformity to the facts generally known, I shall endeavour to group into the following sections the phenomena characterizing the three periods which constitute the cholera:

"I.—*Stage of choleraic predisposition—Slackening of the circulation.*

"The principal phenomena of this period are: the pulse large. slow (as low as 40 pulsations to the minute), and disappearing rapidly;* the respiration slow, deep, mingled with sighs, and presenting but very slight irritability. Subsequently the animal heat less intense, paleness of the tongue and the other mucous membranes; numbness of the limbs, and an extraordinary disposition to the formation of ecchymosis; a defect of perspiration and of characteristic secretions (those from digestion, evacuation of urea, &c.); dulness of the senses, congestions to the head, strange apprehensions and appetites; borborygms, from serosities transuded into the alimentary canal, and the dispositions to diarrhœa which is the result. Phlebotomy furnishes a blood excessively venous, and which is moreover thick, viscid, devoid of fibrine and water, and abounding, on the other hand, in globules and albuminous parts, the consequence of which is, that the blood in the veins becomes coagulable, forms very rapidly, and the serous portions in it are defective. This intermediate stage between health and disease is generally accompanied by a peculiar indolence arising from the defective action of the nervous system, which, receiving a blood not sufficiently oxygenated, is necessarily altered in its functions. Moreover, the phenomena of this period, as they do not cause well-determined suffering, remain in general unperceived or neglected. If these phenomena are attentively observed, it will be recognised that they all have a common origin in the want of energy of the circulation.

"II.—*Collapse stage—Primary stagnation.*

"The characteristic phenomena of this period form two thoroughly distinct groups: that of the stagnation of the blood in the peripheric, and that of congestions in the central organs. To the first category must be referred—absence of pulse, coldness of surface, cold breath, deep respiration, and a complete want of irritability in the respiratory organs, almost impossibility to cough and sneeze; lividity and rugosity of the skin; absence of perspiration, urine, saliva, tears, bronchial and nasal mucus; an insatiable thirst; and a metallic voice caused by extreme dryness of the gullet and larynx, whose dimensions are changed by the dryness itself. Let us add, besides, to this category, the cramps which occur *per reflexum*, in consequence of the pressure on the nervous trunks produced by the stagnant blood. To the congestive group are referred—vertigo, pains in the head, heart, and stomach,

* All the variations of the pulse may be observed with remarkable precision by the assistance of the sphygmometer, an instrument which I have rendered as sensitive as practical, by the application of a hair, which prevents the capillary force.

oppressions of the chest, internal heat,* want of sleep, the characteristic vomitings and purgings, which usually contain nothing more than the serosities of the blood. Phlebotomy furnishes no more blood in this stage, on account of sanguineous obstructions in the capillaries, which hinder the passage of the blood into the veins. I refrain from enumerating the well-known characters of the blood. The air expired in this stage presents less carbonic acid; nevertheless, the quantity increases as soon as what is called reaction comes on, a condition in which, after the stagnation of the blood, the circulation and respiration are accelerated, and when the carbonic acid accumulated during the stagnation is eliminated from the organism.

"III.—*Typhoid stage produced by the consecutive stagnation.*

"The characteristic symptoms of this period are: the pulse small and frequent, a disagreeable heat, a colliquative sweat, and colliquative evacuations generally; a characteristic indifference, delirium, gnashing of the teeth, hiccup, drowsiness, &c., &c. In considering attentively, on the one hand, the characteristic symptoms of cholera, and on the other, the well-known signs presented by the organism when subjected to an excessive atmospherical pressure, we arrive at the conviction that these symptoms resemble each other to such a degree, that they may be regarded as completely identical.—Now, this identity, and the influence of the air in producing the epidemic, are amply confirmed by the following facts:—1st. The cholera is endemic in countries exposed to an excessive atmospheric pressure, as the East Indies, South Carolina, and other countries of the same nature of atmosphere. 2d. Cholera epidemics have always been preceded and accompanied by an excess of atmospheric pressure, and their intensity has always been in proportion to this excess—as would appear by the published diagrams attesting such a relation observed at London, Paris, and St. Petersburgh. 3d. The cholera rages principally on the banks of rivers, the sea shores, in low grounds, valleys, &c. The constant relation between the strength of the cholera epidemic and the lowness of the ground, has been proved by most careful observations made in England, and chiefly in London.† The same relation has been equally evident at Paris, and in France generally. The departments and arrondissements in which the air was most confined always suffered most. It is known that the central departments of France, as also Switzerland, have always been almost entirely free from epidemics. In Russia, the countries which border the Caspian Sea, the level of which is six hundred feet below that of the Mediterranean, have always been the cradle of cholera epidemics. 4th. Cholera epidemics are always propagated in the direction of low grounds, banks of rivers, and other depressed localities. This is the origin of the popular

* Although the temperature generally diminishes among those attacked with cholera, still the parts which are in direct connection with the congested organs, as the vertebral column and the occiput, do not present a lower temperature.

† See the diagram annexed to the report of the scientific committee concerning the cholera epidemic of 1854.

opinion that this epidemic follows the water-course. Besides, the great plain which extends from the Caspian Sea to Paris and London has been the path followed by the cholera in Europe. The constant proportion observed between the intensity of cholera epidemic, and the size of the harbours, confirms also the influence of the depression of the ground. For it is quite evident that the size and depth of the harbour depend chiefly on the lowness of the land, without which the water would have taken a totally different direction. 5th. The mountain heights have hitherto been free from this epidemic, a circumstance which has induced people to take refuge there generally against this scourge. 6th. The specific gravity of the air increases during the cholera epidemic, as has been proved by the observations made by William Prout, in London. "Now, the increase of the specific gravity of the air is always in the proportion of its density, which itself depends on the dryness and accumulation of the atmospheric column superimposed.' 7th. The cholera epidemic is generally preceded and accompanied by an extraordinary calm, which proves the condensation of the atmosphere; on the contrary, the epidemic ceases ordinarily or diminishes after the storm necessarily connected with the rarefication of the air. 8th. If there is any wind during the reign of the epidemic, it is generally dry; and the epidemic extends in a direction contrary to the wind, because the air is condensed in that direction. This observation, while compromising the miasmatic theory, forcibly corroborates the present one. 9th. The epidemic produces, in general, uneasiness and the deterioration of the blood; these effects can only be caused by an agent like the air universally diffused. 10th. Occupations which demand an exercise adapted to augment the active force, such as those of blacksmith, coppersmith, &c., protect to a certain extent against attacks of cholera, whilst the sedentary life predisposes to this disorder. This circumstance has led to the idea of copper preserving from cholera. 11th. The agents recognised as pernicious during the cholera, are precisely those which diminish the active force; whereas the influences which excite and increase it in a direction contrary to the epidemic. The most striking and confirming opinion here exhibited, is the influence of the bleeding employed, in the first moments of stagnation, which is before the coagulation of the blood. It cures the cholera at the very moment of operation, which proves that the cholera depends on a mechanical impediment. 12th. According to observations of Dr. Caspar, cases of sudden death become, in general, more frequent as the barometric elevation increases. The same circumstance has been noticed during the prevalence of cholera.

"Lastly, I may refer here to my own observations above mentioned. It must be concluded from all those facts and observations, that cholera is no other than the result of an excess of atmospheric pressure. We can arrive, also, at the natural explanation of the phenomena attending this disease, from the vaguest premonitory signs of choleraic predisposition to the most prominent symptoms of the collapse and typhoid stages. In a similar manner are explained all the distinctive characters demonstrated by the autopsies. The intimate relation between atmospheric pressure and the cholera epidemic once

firmly established, the mystery attending this disorder will disappear of itself. We shall then find perfectly natural and intelligible its endemic existence in some localities, and its entire absence from others,—the manner of its propagation and extension by the way of low localities, and in a direction opposed to the wind, at the same time sparing the elevated places,—the rapidity with which the cholera epidemic may be developed and disappear—the action of the different agents recognised as salutary or injurious in cholera—the decided predisposition to the cholera exhibited by some individuals, and on the contrary, the almost absolute exemption enjoyed by other persons —and in all cases according to the prevalence of their active force. The primary cause of epidemic cholera consisting in an excess of atmospheric pressure, and the proximate cause being in a stagnation of the blood with its consequences, protection from this malady will be secured by recourse to those agents which sustain the energy of the circulation of the blood and respiration, as soon as there is observed the slackening of the pulse described as above. These agents must, in this respect, be cousidered as preservatives. In Great Britain, attempts have already been made to determine the individuals under imminence of cholera, and thus to moderate the ravages of the epidemic; but these efforts have been confined hitherto to the exclusive examination of the digestive organs, which, during the period of imminence, present only very equivocal signs. Now, the pathognomonic sign of the imminence of cholera is in the slowness of the pulse, and the public hygienist, while determining during the epidemic the individuals who are predisposed, and accelerating the circulation of the blood, might preserve entire populations from the ravages of the epidemic. I will finish with the words of the celebrated English meteorologist, Glaisher:—'Were the meteorology of our town carefully ascertained, and collated with that at the metropolis, and both together with that of the country generally, in a short time we should be in a condition to elaborate a clear insight into the meteorological causes of cholera, influenza, and many phases of disease, which now burst upon us with the suddenness, and devastating power, and wrathfulness of a visitation.'"

Art. 7.—*On the Mortality of certain Diseases.* By Dr. Gairdner, Physician to the Royal Infirmary, Edinburgh.

(*Dublin Hospital Gazette*, Sept. 15, 1857.)

The following important observations occur in a paper communicated by Dr. Gairdner to the section of Physiological Science at the last meeting of the British Association:

"The notes I am about to submit to the section are not to be considered as involving positive and dogmatic statements, so much as tentative data for future investigation. They are, however, I think, not unimportant, as involving the proof of a most striking source of fallacy in the registration of causes of death, according to the methods ordinarily pursued. They show, in fact, that the estimation of the relative and absolute frequency of the different modes and causes of

mortality, is an inquiry as yet in its infancy, and requiring modifications, not only of detail, but of principle, before it can be considered as based upon positive data. A few years since, with the assistance of a considerable number of my medical friends, I made a collection of about 270 cases of fatal diseases, in proportions pretty equally derived from hospitals and from other sources, which series of cases might be regarded as exhibiting, not very unfairly, the ordinary mortality of Edinburgh, in a season free from remarkable epidemic disease. The returns received presented a rather small proportion of infantile mortality; in other respects, they represented all classes of the population, and nearly all ages, in something like the normal proportion. The facts bearing on the fatal event were usually stated in some detail, and not, as in most returns of mortality, by merely attaching an arbitrary name to the symptoms. Thus it soon became apparent that any attempt to assign each death to one cause only, must be arbitrary in the extreme, and must lead to grave inaccuracy as regards the ultimate statement of the frequency of certain causes. In fact, it has been clearly shown that men rarely die of one single disease: almost always there are complex conditions which cannot be, and ought not to be, rendered into a single form of expression. No doubt, one morbid form often predominates, and gives a character to the rest; but not less frequently it is entirely a matter of reasoning, and, therefore, of some degree of doubt, what is the primary and what the secondary disease. The consideration of these circumstances induced my associates and myself, in recording the results of our joint inquiries, to adopt a plan peculiar, so far as I know, to ourselves. Instead of registering one cause of death—one fatal disease—in each case, we determined to register as many as were clearly presented to us by the accounts furnished of the morbid history. Thus a result was obtained widely differing from that of the Registrar-general, and presenting a far greater approximation to the truth as regards some important particulars, than any return, however carefully compiled, founded on the ordinary system. I do not attempt to extend my statements, in the mean time, beyond the case of some very common forms of disease. First in importance, as in frequency, is tubercular disease, in the general sense, with its most frequent special form, *phthisis pulmonalis*. According to my returns, the former is a cause of death to about one fourth, the latter to rather more than one fifth of the population included in these inquiries. According to the Registrar-general, the proportions in London were, in 1854, less than one seventh of the whole mortality for tubercular disease, and less than one tenth for phthisis pulmonalis. The great frequency of tubercular disease is thus assuredly underrated by the Registrar-general, though not to anything like the extent of some other morbid forms. Passing to diarrhœa, I find that this very important cause of death is enormously underrated in the Registrar-general's returns. Diarrhœa is, in fact, entitled to be registered as a source of mortality in little less than one fourth of the population of Edinburgh. In other words, of one hundred who die, not less than from twenty to twenty-five owe their death in some degree to diarrhœa. In the Registrar-general's returns it is only in cholera years that the cipher of diarrhœa

reaches anything like this proportion; the proportion being, in ordinary years, from one seventy-eighth to one twentieth of the general mortality. It is obvious that the residual cases, or those merged and lost sight of by the Registrar-general, are cases of complicated, but not on that account less real or less fatal diarrhœa; such cases are, in fact, an immense majority of the cases of this disease. Disease of the heart, in one form or other, I find to be cause of death to not much less than one eighth of the population, as illustrated by my returns. The returns for London in 1840, show this cause of death as only affecting one fiftieth of the population; since this period, however, the proportion has been gradually rising, evidently owing to the increased care of medical practitioners in reporting, and perhaps also of the Registrar-general in extracting from the reports, the cases to be placed under this head. I find no reason for adopting the popular theory that disease of the heart is in reality on the increase. I believe it is the art of diagnosis which has undergone change, not the frequency of cardiac disease. Pneumonia was fatal to one eleventh; pleurisy (often combined with pneumonia) to one twelfth; bronchitis to one ninth of the population under my observation. These causes of death, also, are considerably understated in the Registrar's returns, and there is this additional anomaly, that while in the first reports of mortality in London the proportion of bronchitis was exceedingly small, it has now come to be for many years the preponderating form of chest disease, and counts its victims by hundreds, where it formerly counted them by tens. Is this a change in the character of disease, or in the character of diagnosis? I adopt the latter view, believing that there is no real evidence whatever of the enormous increase of bronchitis relatively to other forms of chest disease exhibited by the Registrar-general's returns. Next follows Bright's disease, including some of the allied diseases of the kidney, which may, with propriety, be included under the same heading. These morbid conditions I have found to be a source of mortality to about a tenth of the cases observed by myself and my associates. In the Registrar-general's reports for London, on the other hand, owing to the defective means of noting complications, Bright's disease finds its way into the returns in exceedingly small proportions; constituting in general terms not more than $\frac{1}{380}$th of the gross mortality. A result so entirely inconsistent with medical experience as this, is sufficient of itself to show the perfectly enormous errors involved in the mode of proceeding by which one cause of death only is registered.

"I may remark, in conclusion, that in thus pointing out a source of fallacy, and in suggesting the remedy, I by no means wish rashly to supplant the present system of registration for the whole country. The labour involved in a system free from the defects pointed out, would be so prodigious as to stagger the most industrious and indomitable of statists; and the disadvantage of adopting any change in the present system, without preserving the means of comparison of results, is also such as to make it almost hopeless to propose any such measure. I would willingly, however, see limited experiments instituted upon the prevalence and mortality of the more important forms of disease. Such inquiries are well worthy the attention of the

governors and medical officers of public institutions. The great point is to have them carefully executed, and this can only be done by some method which will prevent too great complexity of the investigation. The great object of most statists seems to be the accumulation of details, so as to procure very large numbers. This is, no doubt, necessary in some inquiries; but in vital statistics, a far more important object is the careful scrutiny and judicious appreciation of the conclusions fairly deducible from comparatively small numbers of cases, accurately and amply recorded. I would venture to propose, as a useful preliminary inquiry, the investigation of the most frequent only of the causes of death—excluding, in the mean time, those which are so rare as to require large masses of cases for their fitting display. The causes of death to which I have alluded, are among those of the first importance in frequency, and ought, therefore, to be worked out in detail before proceeding to others."

ART. 8.—*On the Bulgarian Campaign as affecting the Health of the British Troops in the Crimea.* By Dr. WILLIAM AITKEN.

(*Lancet*, July 13, 1857.)

In a communication addressed to the Royal Medical and Chirurgical Society, 14th July, 1857, Dr. Aitken says, that the pernicious influence of the residence in Bulgaria had been hitherto entirely disregarded in estimating the sanitary condition of the troops during the first seven months' occupation of the Crimea, and that in all future pathological inquiries into the nature of the diseases from which our troops suffered, not only in the camp before Sebastopol, but also at Scutari and other local hospitals, the influences noticed in this paper must occupy a prominent place. The great comparative losses which seem to have been sustained by the drafts of new men also requires investigation, but that unless we are put in possession of the ages of the recruits sent out, their exact numbers and periods of service, their admissions to hospital, deaths, and invaliding, as distinct from those of the other troops, the comparative losses they sustained cannot be accurately determined. In this paper the author classifies the Crimean army into two parts, namely—

1st. Into the troops which served both in Bulgaria and in the Crimea, and which may be called the ex-Bulgarian part of the army.

2dly. Into the troops which served in the Crimea only, and which may be simply termed the Crimean troops.

The statistical information upon which the statements contained in the paper are founded, exists in the following records, namely—

1. Parliamentary paper, No. 42, of the session 1857, giving the date of arrival and strength of each regiment.

2. Parliamentary paper, No. 218, of session 1855 (pp. 474—479), giving the same information regarding the drafts sent out.

3. It is known from various sources what were the respective regiments which served in Bulgaria (*e. g.*, Parliamentary papers No. 218 and No. 42, and Russell's 'War').

4. The returns the author had been permitted to use, collected from

the individual regiments, giving the monthly state of the strength of each regiment, and the diseases by which its losses were caused. From these tables the general abstract was made up, which is published by Sir Alexander Tulloch at page 171 of his volume, entitled, 'The Crimean Commission and the Chelsea Board.'

The conclusions arrived at by Dr. Aitken are—1. That the inactive residence in the malarious district of Bulgaria, during a period of three months, exercised a persistent pernicious influence upon the subsequent health of the troops in the Crimea, which continued to make itself felt, more or less, throughout the campaign, and more especially during the first seven months. 2. That the loss to the strength of the army during the first seven months was greatly more in those regiments who had been in Bulgaria, than amongst those troops who had not lived there, but who served during the same period in the Crimea, and who went through precisely similar hardships during the campaign. 3. That the loss of strength to the whole army was greatly increased by the proportionably very large amount of loss sustained by the drafts sent out to recruit the regiments. 4. That the general mortality was increased amongst the ex-Bulgarian troops, and that the invaliding was nearly doubled amongst them. 5. That the persistent pernicious influence of the residence in Bulgaria showed itself in a remarkable manner by the unfavorable results of the surgery of the war amongst the ex-Bulgarian forces, compared with the results in the forces which served only in the Crimea; but that on the whole the results of the surgery of the war were highly favorable compared with what is obtained in our large London hospitals.

The statistical results obtained were offered as approximative conclusions to the truth, from data not sufficiently extensive to give such conclusions with absolute accuracy.

When the sanitary state of the ex-Bulgarian division of the army was contrasted with the Crimean, it is observed—

1. That the admissions to hospital were greater amongst the Crimean portion of the army than amongst the ex-Bulgarian, and contained a greater proportion of enteric diseases, cholera, and scorbutus; while amongst the admissions from the ex-Bulgarian part, fevers and pulmonary diseases exhibited a higher ratio than in the Crimean part. 2. That while the admissions were greater from the Crimean portion, the mortality, compared with the amount of admissions, was much greater amongst the ex-Bulgarian portion of the army than amongst the Crimean. The causes of death which produced the greatest mortality stood in the following order: 1. Cholera. 2. Frost-bite. 3. Enteric diseases; and 4. Fevers, amongst the ex-Bulgarian part. And 1. Cholera. 2. Enteric diseases. 3. Fevers. 4. Frost-bite, amongst the Crimean troops.

With regard to fevers, it is observed that the pernicious influence of the residence in Bulgaria showed itself in the deteriorated constitution of the soldier; and while the admissions to hospital were greater in proportion to strength amongst the ex-Bulgarian forces, the deaths were also more numerous (the per centage nearly doubled), thus proving how readily that portion of the army succumbed to disease; being "used up" when they left Bulgaria, they were less able to cope

with disease, and more of them died. With regard to cholera, it was interesting to notice the similiarity of pathological phenomena presented by the history of that disease in Bulgaria and in the Crimea, compared with its known phenomena as an epidemic disease. Up to, and including, the period from October till May, 1855, two separate epidemics may be said to have affected the army. The ex-Bulgarian campaigners were exposed to both of them. During the first epidemic, while in Bulgaria, they suffered severely; and, indeed, so long as they remained in the vicinity of Varna, the disease never left their camps; they carried it with them to the Crimea, and it continued to seize upon, and kill, many victims on the march from Old Fort to Balaklava, and more especially after the battle of the Alma, and on the famous flank march, when the fate of the more feeble soldiers was at once sealed by death. The Crimean epidemics of cholera present the following remarkable antithesis compared with the other classes of diseases:

1. The per centage of admissions on the average strength of the troops serving in the Crimea only was much greater than the ratio of admissions amongst the ex-Bulgarian troops, and the per centage of deaths from cholera was also greater in the former than amongst the latter.

2. But the per centage of deaths, calculated on and compared with the admissions, was greater amongst the ex-Bulgarian forces than amongst the Crimean troops.

According to what is known regarding the nature of this remarkable disease, it may be noticed that already, during the Bulgarian campaign, the more susceptible of the troops had been seized with the disease, and many had already died. The disease, to use a common expression, "had worked itself out" upon them; so that fewer were in a condition to take the disease subsequently amongst the ex-Bulgarian troops while in the Crimea; and, therefore, fewer of this part of the army died in the Crimea from cholera compared with the strength. On the other hand, it may be observed, that on account of the "used up" condition of the ex-Bulgarian troops, a much larger per centage died amongst them of those who were attacked than amongst those who were attacked amongst the Crimean troops. The ratio of admissions for pulmonary diseases was nearly the same in both divisions of the army; but the deaths amongst the ex-Bulgarian troops were greater than amongst the Crimean forces, and the number invalided was also greater amongst them. It would be interesting to know how far such affections were purely idiopathic, and how far a tendency to the development of tuberculosis had, or had not, been engendered by the Bulgarian or Crimean campaigns. In the personal experience of the author, as well as that of Dr. Fraser, of the North London Hospital, phthisis was a rare disease at Scutari. The period of latency of malarial poison is another topic deserving of especial investigation in the experiences of the Bulgarian campaign. It is known that on the return of our troops from Walcheren, fresh cases of fever continued to occur so late as five, six, eight, nine, and even ten months afterwards, so that the persistent pernicious influence of the Bulgarian campaign was not without a parallel. The reduction

of strength of the ex-Bulgarian part of the forces, compared with the Crimean, is approximatively inferred from the following considerations —namely: 1. The actual deaths in each portion of the army, and the ratio of these to the admissions and to the original strength. 2. The ratio of deaths and invaliding compared to the admissions, and to the original strength of each of the two divisions of the army. 3. The per centage of drafts to recruit the strength of the troops in each of the two divisions of the army. 4. The actual loss of strength by sickness, deaths, and invaliding, in each of the two divisions of the army if drafts had not arrived. The severe duties of the front being chiefly borne by that portion of the army which served in the Crimea only, the loss to the ex-Bulgarian part could not be said to be increased by the severe and necessary operations of war during the siege. Great as was the loss of the corps in front, it was much below what some of the corps suffered who were not in front—*e.g.*, the 46th, 95th, 63d, 33d, 23d, 44th, 28th, and 50th regiments. The loss in these eight corps averaged seventy-five per cent. during the seven months (Colonel Tulloch); and it is worthy of notice, that six out of these eight regiments were ex-Bulgarian forces; and with the exception of the 46th, whose great loss appears to have been from cholera immediately after their arrival, the cause of the great mortality amongst the other regiments is not accounted for. More full and accurate details will yet, no doubt, show how malarious influences imbibed in Bulgaria developed themselves by a zymotic-like action, under the melancholy state of things which Sir Alexander Tulloch and Sir John M'Neill so energetically and boldly brought to light.

ART. 9.—*On the injurious effects of the Treadwheel upon the Health of Prisoners.* By Dr. EDWARD SMITH, Assistant Physician to the Hospital for Consumption, Brompton.

(*Lancet*, June 20, 1857.)

The aim of this paper (which was communicated to the Royal Medical and Chirurgical Society, 26th May, 1857) is to show how great is the wear of system caused by this mode of punishment, the inequality of the punishment, and the serious defect in the quantity of respiratory food supplied to the prisoners. The inquiries were made by the author on his own person in October, 1856, at the Coldbath-fields prison, by the courtesy of Mr. Pownall and other Middlesex magistrates. He worked the wheel during periods of a quarter of an hour each, with intervening periods of rest of a quarter of an hour, in the manner prescribed for the prisoners, and made seven series of observations. The average quantity of air breathed during the labour was 2500 cubic inches per minute, at a rate of respiration of $25\frac{1}{2}$ per minute, and a depth of respiration varying from $91\frac{1}{2}$ c. in. to $107\frac{1}{2}$ c. in. The rate of pulsation varied from 150 to 172 per minute. During the intervals of rest he sat quietly, and after thirteen minutes' rest the rate of respiration varied from 15 to $18\frac{1}{2}$ per minute, the quantity of air respired from 725 c. in. to 980 c. in., the depth from 48 c. in. to 53 c. in., and the rate of pulsation

from 97 to 120 per minute. Before he entered upon the inquiry, he breathed in the standing posture about 600 c. in. per minute, at a rate of 14 per minute, and a depth of 43 c. in., and the rate of pulsation was 75 per minute. Thus, during the exertion the quantity of air inspired was more than fourfold, the rate of respiration was increased two thirds, the depth of inspiration $2\frac{1}{2}$ times, and the rate of pulsation $2\frac{1}{2}$ times. The returns during the period of rest show that the effects of the labour had not passed away in a quarter of an hour. Compared with the results in the quiet sitting posture, the author stated that the effect on the respiration was $5\frac{1}{2}$ times, and on pulsation $2\frac{1}{2}$ times as great; and taking together the $3\frac{3}{4}$ hours of hard labour with a similar period of rest, he proved that the effect upon the system of the 8 hours' labour was equal to that of 24 hours of those not condemned to hard labour; and that if the whole 24 hours were taken together, the effect would probably be two thirds greater than that of occupations not laborious. He then contrasted those results with others which he had obtained for the purposes of comparison. Thus, fast walking, at upwards of four miles per hour, caused a rate of respiration of 30 per minute, a depth of 80 c. in., and a total quantity per minute of 2400 c. in. The rate of pulsation was 130 per minute. Ascending steps at the rate of speed of the treadwheel—viz., 640 yards per hour, caused the rate of respiration to be 22 per minute, the depth 90 c. in., and total quantity per minute 1986 c. in., and a rate of pulsation of 114 per minute. Carrying 118 pounds at the rate of three miles per hour induced a rate of respiration of $24\frac{1}{3}$ times per minute, a depth of 90 c. in., and a total quantity of 2141 c. in. per minute, with a rate of pulsation of 189 per minute. Thus the labour of the treadwheel produces greater effect upon the respiration than any of those modes of exertion, while the effect upon pulsation was greater in the last severe labour only. The total quantity of air breathed per hour upon the treadwheel (if the labour were continuous) would be 150,000 c. in. as opposed to 27,000 c. in. in the quiet sitting posture; and the wear of the system would, upon the known principles of science, be in a somewhat similar proportion. He then proceeded to consider the effect of this exertion upon the system, and showed that the excessive exercise of the lungs and heart must ultimately lead to phthisis, asthma, emphysema, congestion of various organs, and disease of the heart, and in persons with diminished vital capacity of the lungs, and weak hearts, the effect must sooner be very serious. In reference to food, he was of opinion that the reparative (nitrogenous) food, as flesh and bread, was ample, and required revision only in the better distribution of it—as, for example, the removal of 2 oz. or 3 oz. of the 6 oz. of cooked meat, allowed at the dinner four times per week, to the breakfast, which consists only of bread and cocoa. He also pointed out the importance (and especially to those who masticate imperfectly) of rendering the meat tender, and of allowing more time between the meal and the return to the hard labour. The great and most serious defect which he pointed out was in the respiratory food, since neither fat nor sugar is allowed except in combination, as in the ox heads, or in the briskets of beef, and in the milk and cocoa. No sugar, lard, suet, bacon, or butter are allowed, and of course beer and alcoholic liquors are ex-

cluded: these, with starch, are almost the sole articles of respiratory food. He dwelt upon the imperative necessity for an increase of fat, both in relation to the wants of respiration, and to the due digestion of starchy food; and showed that, under the present system, much food must be wasted from non-digestion, and the system must, and often does, decrease in weight. He then explained the mode of working the wheel, and showed that the labour is not only in moving the body as the wheel descends, but in maintaining it erect in opposition to gravity, since the centre of gravity is probably external to and in front of the body. He proved that it is an uneven punishment, the inequality not being that of guilt, but of physical conformation and health; and, moreover, that the resistance offered by the wheel is not uniform in various prisons, and has been lessened at the Coldbath-fields prison; and hence, that the lives of the prisoners are at the mercy of uneducated engineers. He showed that the old, the tall, the feeble, those having unsound teeth, and diseased lungs and heart, those not accustomed to climbing or slow walking, and those with small bones and muscles of the back and upper extremities, must suffer the most, and hence that the punishment falls with different degrees of severity upon different classes of the community. He also pointed out the fact that weak hearts and lessened vital capacity of the lungs may exist with a fair amount of health, and hence would not be necessarily known to the prisoner, nor, indeed, to the surgeon, except on a minute examination. He was of opinion that it was a punishment unfit for the age, (as the discontinuance of it in many prisons also implied,) and certain, if long continued, to induce disease and a premature death; and not only rendered the prisoner a greater cost to the community whilst in prison, by reason of the increased quantity of food which the labour demands, but subsequently from a premature old age; and since the labour is not employed to meet the cost of maintenance of those who furnish the power, it is so much of human flesh and life wasted. In a postscript, he referred to the Government dietary for prisoners condemned for short periods, and showed that a system which affords only bread and water, or bread and gruel, for the whole diet, must be calculated to injure the health of the prisoners, a system far more repulsive than the private whippings which have been proposed and opposed.

(B) ACUTE DISEASES.

ART. 10.— *The Mortality from Eruptive Fevers at different seasons.* By Dr. TRIPE.

(*The Sanitary Review*, July, 1857.)

The main results of this paper (which was read before the Epidemiological Society of London) are these:

1st. That *smallpox* presents two periods of depressed and two of elevated mortality; the first period of elevation occurring in January, and the second at the end of May and early in June, the former being

the lightest; the first period of depression being at the end of March or early in April, and the second in September, the latter being the lowest; and that therefore smallpox is most fatal in winter, and next in summer, and least fatal in spring. 2d. That a series of cold springs is attended with comparatively a large mortality; and that the period of highest mortality coincided with a temperature of less than 40° Fahr., and the lowest of above 46° Fahr. 3d. That the average highest mortality, in 17 corresponding weeks of 1840-56 was more than double the average lowest mortality. 4th. That *measles* has only one period of highest, and one of lowest mortality, the former occurring in December, and the latter varying in different years; but the rate of death in spring is much smaller than in any other quarter. 5th. That the rate of death was greater in the series of spring and winter quarters which were below the average temperature than in those which were above it. 6th. That, as in smallpox, the average highest mortality during 17 corresponding weeks in 1840-56 was more than double the average lowest mortality. 7th. That *scarlet fever* presents one period of highest and one of lowest rate of death, and this more markedly than either smallpox or measles; the greatest number of deaths occurring at the end of October or beginning of November, the lowest at the middle or end of March or early in April. 8th. That the average of mortality is higher in warm springs than in cold. 9th. That the mean of the greatest number of deaths in 17 corresponding weeks of 1840-56 was about twice and four-fifths as as large as the mean of the lowest number of deaths in 17 corresponding weeks. 10th. That although there is a period at which *fever* is more ripe than any other—viz., from the thirty-sixth to the fifty-first week—yet that there is not any particular short period at which it can be said to reach its culminating point. 11th. That the greatest rate of death occurs in autumn and the smallest in spring, the difference between them being less than in any other eruptive fever. 12th. That the average maximum number of deaths in 17 corresponding weeks in the years 1840-56 was not much more than one half that of the minimum. 13th. That the period of greatest mortality from diarrhœa is very definitely marked, occupying a period of about seven weeks (from the thirty-first to the thirty-seventh), during which more than two-fifths of the annual mortality takes place, the greatest rate of death extending from the last week of July to the first week in September. 14th. That this period corresponds with a mean weekly temperature of 60° or above.

ART. 11.—*On the existence of Typhoid Fever in India.* By Mr. SCRIVEN, First Assistant-Surgeon, Presidency General Hospital, Calcutta.

(*Indian Annals of Med. Science*, April, 1857.)

In an interesting paper on Indian fevers, Mr. Scriven relates seven cases which seem to contradict the idea that typhoid and typhus fevers are unknown in India. These cases are not, all of them, so conclusive as could be desired, but still they are of considerable interest. The

one in which the symptoms during life and the appearances after death are most carefully related, is this:

Case.—A sailor boy, æt. 17, admitted January 4th, 1857, into the Presidency Hospital, Calcutta.

January 5th.—Three weeks in Calcutta. Has been sick with diarrhœa the last six days. Watery purging. No straining. Has had a little vomiting. Says he has had only two stools per diem since he fell sick. Has no appetite. Is complaining of headache. Has had two watery evacuations in the night. Face a little flushed. Very thirsty. Tongue slightly coated with a white fur, no abdominal tenderness. Pulse 120. Skin cool and moist. Stools stained with fæces, but do not contain much solid mater. Slept last night.

6th.—No purging in the night. Continues thirsty. Skin harsh. Pulse 120. Tongue a little dry, brown in the centre. Abdomen full, hard. No tenderness. No headache. Has a languid and somewhat distressed look.

7th.—No purging yesterday. Has had some in the night. Stools watery, stained with fæces. Abdomen full, hard, rather tympanitic. No tenderness, or evident enlargement of liver or spleen. Slight moisture on face. Skin otherwise harsh. No spots. Speaks slowly and is rather confused: says he has had no purging. Is greatly prostrated. Decumbency on back. Tongue dry, brown. Pulse liquid, compressible, 136. Respirations 16. No headache. As early as the day before yesterday appeared a little confused; awoke in the afternoon and thought it was morning. Urine straw coloured, acid, sp. gr. 1010, contains phosphates and is highly albuminous.

8th.—No better. Face sunken. A little delirious in the night. Seems listless in the day-time. Speaks but little, but answers questions correctly. Has slight tenderness a little above right iliac fossa. Abdomen still full. Stools frequent, more deeply stained with fæces. Skin harsh. Pulse 128. Tongue dark brown. Sordes on lips. No cough, but slight mucous rhonchus about base of right lung. No evident enlargement of spleen or liver. Pupils dilated. Vomited a little in the night. No eruption on skin. Respirations 16. Temperature 100.

9th.—Much the same. Countenance vacant. Great prostration. Pulse 160, very feeble. Abdomen still swollen. Slight tenderness on right side of belly. Tongue black, dry. Teeth and lips loaded with sordes, only one stool yesterday; three in the night. Is drowsy and stupid, but answers correctly when roused. Had muttering delirium yesterday. No distinct account of any in the night. Temperature 101°. Very thirsty. Respirations only 10 in the minute. Sonorous rhonchus all over both lungs. Skin harsh. No perspiration.

10th.—Seems to be somewhat better. Respirations 14. Pulse 136. Tongue cleaner, brown: less sordes. No delirium. Still a little tenderness of abdomen; somewhat less fulness. Has no cough. Very thirsty. Skin dry. Temperature 97°. Four stools since yesterday morning. Less rhonchus in chest.

11th.—Seems better. No delirium; complains of headache. Tongue moist, less coated. Still thirsty. Two stools since last report.

12th.—Better. Tongue cleaner, moist: almost no sordes. Slept well. No delirium; a little dull of comprehension. No headache; pulse 112. Respirations 16. No cough. Two stools since yesterday morning. A good deal of mucous and sonorous rhonchus in chest. No eruption. No sudamina: skin harsh. No perspiration. Temperature 98°. No abdominal tenderness. Abdomen less swollen.

13th.—Improving. Pulse better, 104. Tongue clean, moist, red; a little

ulcerated at edges. Coughed frequently last night. Complains of slight pain in the head. Urine pale, straw coloured, 1010, acid.

14th.—Much the same. Abdomen hard, not much swollen. Only one stool since yesterday morning. Urine contains a small quantity of albumen.

15th.—No purging since last report. Pulse very rapid and feeble: cannot be counted. Has a superficial slough on the right cheek. No abdominal tenderness. Coughs frequently. Tongue moist, slightly coated.

16th.—Erysipelas commenced yesterday from the slough on the cheek, and has now involved the whole of the right side of the face, except the forehead, and extends over the nose to the other cheek, involving the left eye. Right eye closed. Has been delirious in the night. Breathing oppressed. Pulse very rapid and feeble. Has been three or four times at stool. Evacuations consistent, partly figured. Belly not swollen, but rather hard. No tenderness.

17th.—Died at 1 a.m.

Post-mortem examination, thirteen hours after death.—Body not greatly emaciated. *Head:* Brain and membranes perfectly healthy. *Thorax:* Heart healthy, contained almost no blood; weight, 8¼ oz. Lungs adherent by old adhesions, much congested posteriorly, a great deal of frothy liquid exuded from them on section. Surfaces rendered irregular by hard masses scattered through the substance, apparently consequent on lobular pneumonia. No tubercle. *Abdomen:* Liver flabby, anæmic; weight, 62 oz. Kidneys soft, flabby. Capsule separated with difficulty, tearing off portions of the cortical substance, which had numerous white granules, the size of pin's heads, scattered through it, and surrounded by vascularity. Weight of right kidney, 9 oz.; of left, 7½ oz. Spleen engorged, soft, pulpy; weight, 9½ oz. Stomach healthy. Large intestine healthy. Small intestine healthy for the greater part of its length: the first two or three of Peyer's patches (proceeding from above downwards) were likewise healthy: the next three or four were congested, and raised, of a dusky purple colour. Below this the mucous membrane itself was inflamed, and Peyer's patches ulcerated. The solitary glands were likewise inflamed, and many of them ulcerated. The ulcers involved the whole of the surfaces of the patches; there was no slough present upon any of them. The ulcers were of a purple colour. The intensity of inflammation increased downwards, and at the lower end the mucous membrane was of a deep red, which was evident indeed on the peritoneal surface, but there was no ulceration in the last three inches of the gut, nor on the ileo-colic valve. The mesenteric glands corresponding to the diseased parts were enlarged, and of a deep purple colour.

Art. 12.—*Is intestinal Hæmorrhage diagnostic of Typhus or Typhoid Fevers?* By Dr. Henry Kennedy.

(*Dublin Quarterly Journal of Medicine*, Aug, 1857.)

In this paper, which was read at a meeting of the College of Physicians in Ireland, Dr. Kennedy relates a case of typhoid fever in which blood was poured out in very large quantities from the lower part of the jejunum and upper part of the ileum, without any abrasion, and after this he analyses the cases recorded by Louis, Chomel, Jenner, and others. His conclusions are:

1. That intestinal hæmorrhage is common to fevers of both the typhus and typhoid type.

2. That it would appear to be more common in typhus and common fevers, than in typhoid fever.

3. That the blood may, beyond dispute, be exuded from the mucous membrane, independent of ulceration.

4. That a hæmorrhage sufficient to cause death may take place from the mucous membrane of the small intestine, and may be, in the strictest sense, an internal hæmorrhage, the blood not leaving the part on which it was poured out.

5. That the recovery of patients after intestinal hæmorrhage is, in general, too rapid to allow us to suppose that it was the result of ulcerated intestine.

6. That as a corollary from these several points, intestinal hæmorrhage may afford us an additional diasnostic mark between typhus and typhoid fevers.

Art. 13.—*On the Spots observed in the progress of Fever as a means of diagnosis.* By Dr. Henry Kennedy.

(*Dublin Hospital Gazette*, April 15, 1857.)

With regard to these spots, views prevail which, in Dr. Kennedy's opinion, are not supported by facts. He has often observed cases of fever to come from the same room—often from the same bed—and yet some of them only to present spots. Or a husband and wife are attacked with fever, and the one is spotted, and the other not. Some time since, three brothers, adults, were admitted into Cork Street Hospital, under the care of Dr. George Kennedy. They lived together, and were admitted within two days of each other; they had all heavy fever, but one only was spotted. Will it be maintained that those men suffered from different kinds of fever, merely because one was spotted and the others not? Some time back, he saw, with Dr. Denham, five members of the same family labouring under scarlatina; not one of these had the same form of disease. Few would maintain that the disease was due to a different poison in each instance. Yet, when precisely a similar occurrence takes place in our ordinary fevers, it is considered by many to be caused by a variety in the poison; and the presence of spots, above all, makes many look on the disease as something very specific. Dr. Kennedy believes that all such differences as those alluded to are due, either to the intensity of the poison, or the state of the constitution at the time being; or any cause rather than a difference of the poison.

A second point to be noticed is, as to whether there is anything of a specific character in the fever of this country. In 1847-48, the expression "Irish fever" was to be found through all the English papers. Dr. Kennedy asserts that there is no fever peculiar to Ireland, as distinguished from what is seen in England and Scotland; and also that, before the epidemic fever in Ireland in 1847-48, the disease had increased much in England. There is a great law affecting all the more wide-spread epidemics, and showing that their course across the globe is from east to west, or from south-east to north-west.

At a certain period of some cases of fever, spots make their appear-

ance. This is usually from the sixth to the ninth day of the disease; but on this point there are great differences. They will be occasionally seen as early as the third day, reckoning from the period of the rigor. There are difficulties, however, in determining this; for it by no means follows that the patient is not ill before the rigor. Still, some of the cases seen by Dr. Kennedy were inquired into as minutely as was possible, and the spots did appear then on the third day. On the other hand, they are often much later than what is usual in making their appearance. Thus he has seen them as late as the twentieth day; and very critical cases all such in general were. In cases where the fever is made up of two parts, with an interval between, they may be absent in the first and present in the second, and *vice versâ;* though the last is not as common as the first. Dr. Kennedy has notes of more than one case where the individual passed through three distinct fevers before leaving the hospital; yet it was only in one of the series that spots appeared. It is the last of the series which exhibits the spots in these instances. In one case of this kind, it was the fourth attack, and the spots then were of the character of measly eruption.

There is still one other point worthy of notice in connection with cases where we should have every reason to suppose that they would appear at the same time. As an example, not long since, two sisters, both grown women, and remarkable for their great stature, were admitted into Cork Street Hospital, labouring under heavy fever. They each exhibited spots; yet one of them was spotted four clear days before the other. The fact is of interest, as showing how the constitution will modify the eruption; for there was no other explanation which, in this particular instance, would account for it. These two sisters had sickened at the same time. Precisely an analogous circumstance has come under Kennedy's notice in scarlatina; that is, the period at which the rash appears will vary by three or four days, though children of the same family have sickened together.

The spots of fever may exhibit themselves, as is well known, over the whole body; but in general they are more limited than this. Dr. Kennedy believes they will be as early seen about the pectoral muscles as anywhere else. There are some modifications of them, however, having relation to their site, which appear worthy of notice. Thus it is by no means uncommon to see them exclusively confined to the upper part of the body. Not one will be seen on the lower limbs. He has seen them, too, nearly exclusively confined to the abdomen, but not absolutely. Again, Dr. Kennedy has seen them confined, in the most marked manner, to the joints. Not long since, a young man of eighteen was admitted into Cork Street Hospital, under Dr. George Kennedy. He was very seriously ill, his fever being marked by prolonged vomiting. His pulse was rapid and very weak. In the course of this illness, his elbows and knees exhibited spots, each in number, probably, of from forty to fifty. Not a single spot could be detected anywhere else. Their character partook of a mixture of purpura and petechiæ, and they appeared to be sligthly raised. The case recovered. He has seen many cases where the spots were first visible on the backs of the wrists; and usually they have here been of a bright red colour. He has seen also instances where they were located in patches,

as it were, and these symmetrical, on each pectoral muscle. In one instance, well-marked spots, of a bright hue, came out over the whole throat and neck, and the inside of either elbow; nor could any be detected elsewhere.

Lastly, he has seen spots on the forehead. He mentions this particularly, because some observers have asserted that they are never seen here. He has notes of some eight cases, which may now be increased to eleven, where there could be no question of the fact. Louis gives one instance were spots were visible on the face. The way, then, to speak of the fact is, as being very rare, in comparison with the number of cases which exhibit spots elsewhere; but to say it does not occur at all, is going further than facts will justify. Dr. Kennedy thinks he has seen spots on the conjunctiva, or at least what might be described as a mottled state of this membrane; and instances are not uncommon where a rupture of a blood-vessel, or an exudation of blood, has caused a distinct ecchymosis in fever. It is straining the fact too far to suppose that such a spot is but an ordinary petechia in an unusual place? He has never seen the occurrence in fever, except in conjunction with spots elsewhere.

The character of the spots in fever has long attracted notice, and some of them unquestionably deserve a special attention; but it appears to Dr. Kennedy that too much stress has been laid on this point. Thus the bright, well-defined, lenticular spots are, he believes, constantly spoken of as being different from what are called genuine petechiæ. He thinks this is an erroneous way of considering the matter; for the simple reason, that they may be very often seen existing together, at the same time, and on the one patient. In this way, we may find the bright well-defined spots on the arms, and the petechiæ on the body. Or, again, we may see one member of a family presenting the bright spots, and another the petechiæ; yet both have come from the same room. Some of the older authors on fever have described two crops as occurring in the one patient. This he has seen in the most marked form, not only in fever, but also in scarlatina. And, in truth, the analogies which the exanthemata hold, one with the other, do not appear to him to have received that consideration which they deserve. Who has not seen cases of scarlatina presenting on the surface different hues of eruption at the same time? Purpuric spots, great patches of redness of different hues, universal redness of the entire surface, and above all, spots, not possible to distinguish from what are called genuine petechiæ, may be mixed up together in the one patient; to say nothing of the varieties which the disease so often presents when going through an entire family. Now, under such circumstances, no one ever dreams of saying there are different poisons, according to the varied hues of the rash; yet, when exactly analogous facts occur in common fever, some inexplicable necessity seems to arise for drawing distinctions where there are in reality none, and refining to a degree which, it appears, facts do not justify. That much valuable information—more especially as regards prognosis—may be derived from close observation of the eruption which common fever exhibits, is readily admitted; such as the brighter or darker hue which it presents, the greater or lesser size of the spots, their early or their late

appearance, &c. But these points are quite beside the question whether the varieties which we see in the rash of common fever be due to separate and specific poisons, or only to one; and whether it be not more consistent with facts to attribute them rather to the temperament of the patient, the state of his general health at the time being, his age, &c., rather than to this or that poison.

This leads to a question in direct connection with this part of the subject, about which more has been written than on any other; that is, the distinction which exists or is said to exist, in the rash of typhus, as distinguished from the fever attended by local lesion in the small intestine, and known as typhoid fever. On this point, Dr. Kennedy believes authors have been too precise, and have not made allowance for the possibility of deviations, which here, as indeed in every other point connected with fever, are liable to arise. Thus, from the perusal of the most recent works on the subject, one would suppose that typhoid fever could not exist without the presence of bright lenticular spots, few in number, and disappearing long before the fever ends. He does not deny that this state generally obtains; but he says that it is by no means constant. He has observed cases from the very beginning to the death of the patient, and to a post-mortem examination, disclosing ulceration of the small intestine; and yet from first to last no spots whatever were visible. And the opposite of this, again, is still more common. He has notes of a number of cases where the spots had all the characteristics, as to time, number, size, and disappearance, and yet the cases had no other symptom whatever of enteric fever, and in reality were not the disease at all. He has also witnessed cases where all the symptoms were those of enteric fever, except that the spots were dark on the chest; and in the inguinal regions, assumed the character of purpura; also a case where the spots were genuine petechiæ, and where ulceration of the bowels was found. With such facts in view, great caution should be used in pronouncing any spots as diagnostic of this or that kind of fever; or at least in giving them more weight than any other single symptom of the disease is entitled to.

It has been already stated that much valuable aid, in a prognostic point of view, may be derived from the spots which appear in fever; and it is generally admitted, that the darker and larger they are the more serious is the case. The worst cases Dr. Kennedy has ever seen have been attended with few spots of a large size, and confined very generally to the region of the clavicles and groins, sometimes running down the inner side of the thighs. These large and dark petechiæ, or by whatever name they are called, are not confined to typhus, but may be seen in puerperal fever, and in some cases of malignant scarlatina. He has also observed cases—rare ones—where the subcutaneous veins of both the upper and lower extremities have allowed a bloody serum to exude, which is quite visible through the skin. With this state he has found in the pleura, and also the pericardium, and on the surface of the brain, serum poured out which was likewise tinged deeply with blood. In one instance he found a large effusion of blood under the pleura covering the left lung.

Of the supervention of fever in persons afflicted at the time with chronic diseases, all have probably seen examples. He has met

several examples of persons who were hemiplegic, and in this state were attacked with petechial fever; and again, others who laboured under chronic bronchitis and asthma. Cases of phthisis, too, have come under his notice in a similar way; but the fever in these instances has been rarely attended with spots. This latter, however, he has witnessed, the rash being most copious. Cases of chronic affections of the eyes, ulcers of the legs, and chronic diseases of the skin, are of very common occurrence in union with spotted fever. Lastly, he has witnessed fever, in its very worst forms, with both primary and secondary syphilis. It is worthy of notice how little any of these affections are altered by the fever. They are certainly not made worse; though such might be expected, at least of some of them. He has, however, seen cases of disease of the skin, where it was got rid of, after the fever. But usually they go on as they did before. It is only a state of derangement of the general health, and not any specific affection, which is likely to be bettered by spotted fever.

Dr. Kennedy concludes his paper by the following propositions:

1. There is no form of fever peculiar to Ireland.

2. In 1847-48, the epidemic which then prevailed in Ireland had existed in England for months previously.

3. This epidemic, like all other great ones, travelled from east to west.

4. The idea of different poisons, as a cause of the several varieties of rash, does not appear to be borne out by facts.

5. The analogies derived from the study of the exanthemata are opposed to the idea of there being more than one poison.

6. Red and dark petechiæ may co-exist in the same patient, at the same time.

7. Either may precede the other. That some members of a family may exhibit spots—others not; all being ill at the same time.

8. Petechiæ may be almost exclusively confined to the abdomen, or to the upper half of the body; or exhibited in groups on the pectoral muscles, the front of the larynx, or strictly confined to the knees or elbows.

9. They may be seen occasionally, but unequivocally, displayed on the face, and possibly on the conjunctivæ.

10. Bright lenticular spots, and few in number, are of frequent occurrence, without any other symptoms of enteric fever.

11. Fever without intestinal lesion way exist without any spots whatever.

12. The same lesion may exist with dark petechiæ.

13. Petechial fever may run its course in patients affected with such diseases as hemiplegia, phthisis, syphilis, &c.

14. Large, dark petechiæ are not confined to typhus, but may be seen in puerperal fever, and cases of malignant scarlatina.

15. In some very bad forms of fever, the veins allow the blood to exude in a very striking way; and together with this, serum, deeply tinged with blood, may be found poured out in the serous cavities.

Art. 14.—*The history of Gaol Fever in England.* By Dr. F. C. Webb.

(*The Sanitary Review*, Oct., 1857.)

The subject of this paper is introduced by some remarks on the impossibility of any class of society being subjected for a length of time to the causes of disease without final participation by the rest of the community in the results. The testimony of Lord Bacon is extant as to the frequent occurrence of disease taking its origin among prisoners "long, and close, and nastily kept." That such occurrences were not limited to his age is abundantly proved by extracts from the writings of Howard and Wild, illustrative of the state of prisons in the 18th and early part of the 19th centuries, and of the etiology of gaol fever. The appreciable causes which produced the disease, were, the crowding of human beings in wall dungeons, the withdrawal of a proper supply of air and water, the want of nourishment and exercise, inadequate clothing, the filth resulting from the absence of sewerage and necessaries, the operation of a sanguinary and ill-regulated penal code, and consequent mental depression. Reference was then made to various acts of legislation on the subject of gaol fever. The first outbreak of gaol disease of which we have an account took place in 1414, when the prisons of Newgate and Ludgate were severely visited. In 1522 an outbreak took place at the sessions held in the castle of Cambridge. This was followed in 1577 by the celebrated "Black Assize" at Oxford, when 510 persons were infected, and died from July 6th to the 10th of October. A description of the symptoms of the disease is given from the accounts of Cogan and Stowe; the testimony of the former as to the exemption of women and children—until a late period the gaol distemper was popularly believed to affect men alone. That this in the 18th century was not founded on fact is proved by the testimony of Pringle and Lettsom. The "sickness of the house," in the Queen's Bench prison in 1579 was made the occasion of a petition to Queen Elizabeth. A similar outbreak to that at Oxford took place at Exeter in 1585. A scantiness of detail as to disease in prisons in the 17th century was accounted for by the difficulty of separating the prison element from the general run of cases, producing the pestilential fever so frequently rife during the civil wars; by the succession of epidemics of plague, and the frequency with which petechial fever was confounded with that disease; by the political excitement of the time, which probably interfered with the careful chronicling of such events. Gaol fever was found to prevail in the 18th century, whenever from any cause the gaols became crowded; as in 1730, from the unparalleled amount of crime in 1749, on the conclusion of the peace of Aix-la-Chapelle; and under similar circumstances in 1783. Allusions are made to the outbreak at Taunton and Exeter, in 1730; the state of the Irish prisons in 1740 and 1741; the disease in the gaols of Limerick and Tralee. The distemper was conveyed by some deserters who had been confined in prisons, to the Duke of Cumber-

land's army, at Inverness, in 1746. The author then gives Pringle's account of the epidemic. An outbreak occurred at the Old Bailey Sessions, in 1750, when curiously enough those to the right of the Lord Mayor generally escaped; the reason assigned being that a stream of air from the window directed the *materies morbi* to the other side of the court. A great benefit resulted from a ventilation constructed at Newgate, and worked by a machine in the manner of a windmill, in 1752. Seven of eleven workmen employed in erecting this ventilation contracted the fever, and by one of them a whole family was infected. Notice was then made of its conveyance from Exeter gaol to the town of Axminster, in 1750. It prevailed in 1761, among the prisoners of war at Porchester and Winchester; at Warwick and Bedford, in 1772—spreading, in the latter instance, to the town. Dr. Lettsom describes an outbreak in Long Lane, Aldersgate Street, the fever being brought there by a person who had contracted it in Newgate. Outbreaks occurred in Aylesbury gaol, in 1773-74; at Dublin, in 1775; at Hertford, in 1776. It subsided in the borough and county gaols until 1783, when part of the forces being disbanded, the prisons were again crowded, and fever reappeared. At Worcester it appeared in a malignant form, and was thence conveyed to Droitwich. The author proceeds to give Pringle's and Lind's testimony as to the influence of prisons as sources of infection to the army and navy. The disease was also carried by transported felons to the penal settlements in America. The fever which broke out amongst the Spanish prisoners, in 1780, appears to be distinguished from the English gaol distemper, by the general absence of eruption and head symptoms. Dr. Webb states his opinion of the nature of the true gaol distemper. It was typhus fever in its most characteristic form, identical with hospital and ship fever, and the pestilential fever of Sydenham. When suddenly fatal, which it frequently was, it corresponded with the "typhus siderans" of authors. Great light has been thrown by the subject on the etiology of typhus fever. It has entirely disappeared as a gaol disease. The author concludes the paper by a few remarks on the encouragement afforded by such a retrospect to philanthropists and promoters of sanitary reform.

Art. 15.—*On the Temperature of the Body in Intermittent Fever.* By Dr. S. Th. Michael.

(*Archiv für Physiolog. Heilkunde*, Heft 1, 1856.)

These observations were made in different types of intermittent fever, and repeated at intervals of five minutes, so as to determine with exactness the precise variations of temperature.

Their result is that the temperature begins to rise at the rigor, and rises by slow degrees; and that after this it falls by slower degrees, and with intermissions. At the commencement of the rigor, and at the end of the period of sweating, the temperature is below the natural standard, sometimes to the extent of some degrees, sometimes to certain portions of a degree.

In the majority of cases, the maximum elevation was between 32°

and 33° Reaumur, rarely below, more frequently above. The highest point ever attained was 33·4 Reaumur.

After the administration of sulphate of quinine the temperature did not attain to the same degree of elevation as previously; and during convalescence it remained below the normal standard, or only occasionally became raised to the fraction of a degree above it.

ART. 16.—*On the interblending of Dysentery, Scurvy, and Typhus in the Hospitals of Constantinople during the winter* 1854-55. By Dr. THOLOZAN.

(*Bull. de l'Académie*, xxi, Sept., 1856; and *Schmidt's Jahrb.*, iv, 1857.)

During the winter 1854-55, Dr. Tholozan had under his care, in the principal French Hospital at Constantinople, 1200 patients, of whom 290 died there from cholera, dysentery, scurvy, and typhus. The three latter affections, he tells us, were frequently so interblended the one with the other, that it was difficult to say which of them was the predominant affection. Persons suffering from scurv were delirious as in typhus, or they exhibited symptoms of dysentery; those affected with typhus suffered from dysentery and became scorbutic. The characteristic exanthem of typhus appeared along with symptoms of dysentery in some cases, and instead of fever, the symptoms were delirium, headache, singing in the ears, and sleeplessness. A dysentery of this kind was especially contagious, and frequently gave rise to typhus. In other cases, scurvy was complicated with dysentery, and the affection of the gums and the bloody infiltrations were wanting. In others, again, the symptoms of typhus suddenly gave place to those of scurvy in their severest forms, and a gangrenous condition of the mouth and of the extremities became a frequent condition. In many instances, also, this confusion was even worse confounded by circumstances which had to be referred to cholera, rather than to dysentery, or scurvy, or typhus.

ART. 17.—*On the value of Arsenic in Cholera.* By Dr. BLACK, of Chesterfield.

(*Lancet*, Oct. 3, 1857.)

Having been led to think (*v.* 'Abstract,' Vol. XX, p. 241) that quinine and arsenic were the most trustworthy remedies in cholera, we are quite prepared to believe, with Dr. Black, that arsenic will also prove to be a valuable remedy in the same affection. Dr. Black says:

"It is now almost three years since I published, in a contemporary journal, a number of cases of the very worst form of English cholera, in which I had obtained a rapid and effectual cure from the use of the liquor arsenicalis. Since that time I have had ample opportunities of further testing the value of this remedy in cases of English cholera, presenting symptoms so severe that, had the Asiatic form of the disease been prevalent at the time, there would probably have been no hesitation in referring the cases in question to that particular

type. In all these cases the arsenical treatment was followed by such rapid subsidence of the symptoms, and by such quick and complete restoration to health, that I have been led to regard arsenic in the light of a *specific* for cholera.

"It is not in the milder forms of the disease, which are traceable to disturbing injesta, that arsenic will be found beneficial; but in those severe and aggravated cases which occur in the narrow alleys, badly drained, ill-ventilated dwellings, amidst the filth, poverty, and squalid wretchedness of certain districts of most towns.

"In the absence of necessary sanitary measures, in the conditions favorable to the generation of animal and vegetable poisons, and in the presentation of foci from which the diffusion of such poisons may take place, Chesterfield is not surpassed, if equalled, by any other inland town of similar size within the United Kingdom. It is a fact confirmatory of this remark, that at no time within the last twelve years has the town been entirely free from typhoid fever; that this form of fever and epidemic typhus ravage the place at intervals of one to two years; that here scarlatina assumes its malignant form; that epidemic dysentery is not uncommon; and that during the summer and early autumnal months the cases of cholera are numerous, and many of them extremely severe. As an example of the last-mentioned disease, I detail the following case, which occurred in my practice in August last, and which, as one amongst many such, shows alike the character of cholera as it occurs in Chesterfield and its neighbourhood, and the value of arsenic as a remedial agent:

Case.—J. P—, æt. 42, by trade a master potter, was seized on August 13th of the present year with violent vomiting and purging, accompanied by frequently-recurring pains in the abdomen, and by general collapse. The dejections were thin, watery, somewhat offensive in odour, and contained a moderate proportion of bile. The vomits consisted of food previously taken, with certain admixture of a thin mucoid fluid.

These symptoms were combated by lead and opium, chalk mixture with catechu, friction, the application of external heat to the extremities, sinapisms, and turpentine stupes to the abdomen, and by weak cold brandy-and-water to drink. Despite the diligent exhibition and application of these remedies, the symptoms increased in severity from hour to hour. In the morning of the following day, I received an urgent message to attend immediately, as, in the opinion of his friends, the patient would die. On arriving at his home, I found him in the greatest collapse, with countenance pale, livid, and of a leaden hue; eyes glassy and sunken in their orbits; nose nipped; tongue pale and besmeared with a thin layer of mucus; breath cold; great thirst; skin cold and soddened, with a clammy perspiration; voice reduced to a thin, slender, squeaking note; pulse thready, running, and incapable of being numbered. The dejections are involuntary, almost constant, left little or no stain upon the bed-linen, of a faint, sickly odour, and evidently consisted of a serous fluid. The vomits were frequent, and of a thin, pale, sero-mucoid fluid; the cramps, which seemed to affect the whole muscular system, were rapid, powerful, and agonizing in their character. Suppression of urine had existed for fifteen hours.

I gave immediately six drops of the arsenical solution, repeated the dose in ten minutes, and again in twenty minutes more. Directly after swallowing the third dose, the patient, with a slender, tubular voice, ejaculated, "There,

that will stay." He was right; it did stay, and from that moment the vomiting ceased. The arsenic was now repeated at intervals of half an hour. By-and-by the cramps and purging ceased, the sphincter ani recovered its power, warmth began to diffuse itself over the surface of the body, the pulse became steady, distinct, and numerable; and, at the end of two hours, I left my patient in comparative safety. During the night the arsenic was continued in three-drop doses every third hour. On the following morning I found that there had been no repetition of either vomiting or purging, and that the renal secretion had been restored during the night. Two days afterwards he was able to leave his bed; but his convalescence was marked by anasarca, the result of the action of the choleraic poison on the vitality of the blood, and of the great diminution of its solid constituents by the copious evacuations which occurred during the urgency of the attack.

"Now this case occurred in a dwelling which stood upon a dead flat of ground, from three to four feet below the level of the contiguous road, which had consequently no fall for drainage, and the cellar of which stood one or two feet deep in water during rainy weather. Its occurrence arose after a heavy fall of rain, and when the imperfect drains in question emitted an almost intolerable smell. It is therefore fair to presume that it had its origin in some noxious emanation from the drains, with which the circumambient air became impregnated, and thus acquired the power of injuriously impressing living bodies.

"*To destroy such a poison in the blood, I gave to the blood a poison, which acted in accordance with a well-known physiological law, and cured the disease.*

"I have done so in many such cases, in which the ordinary remedies for cholera had entirely failed, and I have *invariably* found that the arsenic exerted a rapid power of control over the vomiting and purging, and quickly brought about a state of convalescence.

"From such data, then, I maintain the *specific* action of arsenic in the very worst form of English cholera, and I thence infer for it a similar power in the malignant type of the disease.

"The instructions for its use are simple and precise. For the Asiatic cholera, ten or fifteen drops in cold water, every ten or fifteen minutes, until vomiting and purging abate, and then smaller doses, at more distant intervals, until reaction is established."

Art. 18.—*A new treatment of Cholera.*

By Mr. Boate, late one of the Surgeons to the Inniskillen Dragoons.

(*Lancet*, Aug. 8, 1857.)

This is the groundwork of Mr. Boate's treatment in every stage of cholera:—"First begin with an emetic, followed (after the action of the emetic has ceased) by an opiate—say thirty to forty minims of tincture of opium, and thirty minims of sulphuric ether, to two ounces of water. If this does not rest on the stomach, a pill, composed of three grains of calomel and one grain of opium, is to be given. This will often remain on the stomach when nothing else will. But what is to be done in collapse, when the pulse is small and thready, respiration

almost suspended, and lividity pervading the whole system (the circulation being impeded owing to the contracted state of the lungs)? Chloroform is the grand remedy. But how does it act, or how should it be administered? It is given by inhalation, carefully marking or watching the effect upon the pulse. Now the first effect of chloroform is a strong stimulant, the pulse becoming full and bounding, where before its use it could hardly be felt. You must prolong its application as long as the pulse is full, and the moment it begins to sink withdraw the chloroform; alternately repeating and withdrawing the stimulant until the patient lapses off to sleep. I may also add, that in a case of incessant vomiting, where nothing will remain on the stomach, a full opiate, say thirty or forty minims of tincture of opium in combination with half a drachm of ether, may be given in a little water, and then the chloroform administered, which instantly checks the vomiting; and this action being kept up the opium becomes absorbed, and sleep very soon follows."

"This," says Mr. Boate, "I maintain is a *new treatment*, and one which I invariably adopted during the cholera epidemic at Varna (where I was in charge of Her Majesty's 6th Dragoons), and with such results, as the Army Medical Board returns show, that out of sixty-two cases of genuine Asiatic cholera I only lost nine patients (about 14 per cent.)"

(c) CHRONIC DISEASES.

ART. 19.—*On Spanæmia, Chlorosis, and analogous conditions, as the predominant characteristic of the present age.* By Dr. POLLITZER.

(*Zeitschr. der k. k. Gesellsch. der Aertze*, Feb., 1857; and *Medico-Chir. Review*, July, 1857.)

"Dr. Pollitzer takes a very gloomy view of the condition of the human race at the present time, and considers it to be an established fact that the physical deterioration in Europe is profound, 'a sad memorial of civilisation.' He admits the general diminution of mortality in all civilised countries, but affirms this to be a fallacious test, as there is not a corresponding increase in the health and vigour of the race, or in the number and character of the diseases. The reduction of the mortality, the author attributes to the increase of hospitals and similar charitable institutions,—to quarantine, vaccination, and numerous sanitary regulations. The boundaries of health and disease, he observes, are daily becoming less marked, and he considers it characteristic of modern pathology to affirm that there are numerous conditions which are undoubted deviations from the healthy standard, though it is impossible to delineate or give definite portraits of them, because they make their appearance during a state of 'relative health.' The physician has no name for the disease, but the patient maintains that, not feeling in health, he has no alternative but to call himself ill. This anomalous condition, Dr. Pollitzer accounts for by the spanæmia and chlorosis, which he regards as the feature peculiar to our times—the soil in which the feebleness and deteriora-

tion of our race take root. After developing his views more in detail, the author proceeds to show how these conditions are fostered by modern civilisation. A constant stretch of the mental powers,—a restless excitement of the passions,—a perpetual struggle for advancement,—the fresh wants of every day, science and the arts themselves being subservient even to the luxury and demoralisation of the times,—the destruction of all moral harmony and peace,—are advanced by Dr. Pollitzer as the evils of modern civilisation. And these evils react especially upon the younger generation; and the demands made upon the youth of eighteen or twenty of the present, would formerly have been considered a sufficient tax for the strength of a man of upwards of five and twenty. He inveighs especially against the polymathy (if we may coin the word) of children, among whom the spanæmia and chlorosis of the age especially flourish.

"Having for seventeen years devoted himself to the study of children's diseases, he has arrived at the conclusion that the features which characterise our age have their source in the treatment of childhood, and that the deterioration of the race at large takes its origin in that of childhood.

"The facts upon which Dr. Pollitzer bases his remarks are, that anæmia and chlorosis occur alone, or associated with rickets, hypertrophy of the lymphatic glands, and of the spleen and liver, to an incredible extent, even from the first month of life. Of 1000 children that were treated in the children's hospital, on an average 700—800, or from 70—80 per cent., were thus affected. He also observed that the anomalies of the blood and constitution, which are so widely diffused, invariably appear where the nutrition of the child has been imperfectly affected. The stomach and intestinal tract are the parts that first suffer, hence it is in these organs that we discover the prevailing morbid conditions of childhood; and while they materially influence the mortality of children they equally affect the state of their future health when they survive childhood."

Art. 20.—*On the proximate cause and specific remedy of Tuberculosis.* By Dr. John Francis Churchill.

(*Dublin Hospital Gazette*, Aug. 15, 1857.)

The following is the abstract of a paper which was laid before the Academy of Medicine at Paris, on the 21st of July, 1857.

The total number of cases of phthisis treated by the author amounts to 35. All were in either the second or the third stage of the complaint—that is, they had either softened tubercles or cavities in the lungs. Of these 9 recovered completely, the physical signs of the disease disappearing altogether in 8 out of that number; 11 improved considerably, and 14 died; 1 still remains under treatment.

The proximate cause, or at all events an essential condition of the tubercular diathesis, is the decrease in the system of the phosphorus which it contains in an oxygenizable state.

The specific remedy of the disease consists in the use of a preparation of phosphorus, uniting the two conditions of being in such a

state that it may be directly assimilated, and at the same time at the lowest possible degree of oxydation.

The hypophosphites of soda and lime are the combinations which hitherto seem best to fulfil these two requisites. They may be given in doses varying from ten grains to one drachm in the twenty-four hours. The highest dose which I have been in the habit of giving to adults is twenty grains.

The effect of these salts upon the tubercular diathesis is immediate, all the general symptoms of the disease disappearing with a rapidity which is really marvellous.

If the pathological deposit produced by the dyscrasy is of recent formation, if softening has only just set in and does not proceed too rapidly, the tubercles are absorbed and disappear; when the deposit has existed for a certain time, when the softening has attained a certain degree, it sometimes continues in spite of the treatment, and the issue of the disease then depends upon the anatomical condition of the local lesion, on its extent, and upon the existence or non-existence of complications. The author has made numerous attempts to modify the local condition of the lungs by the inhalation of different substances, but has never obtained any satisfactory result independent of what was to be attributed to the specific treatment. The hypophosphites of soda and lime are certain prophylactics against tubercular disease.

The physiological effects which he has observed to be produced by the use of the hypophosphites of soda, lime, potash and ammonia, show these preparations to have a twofold action. On the one hand they increase the principle, whatever that may be, which constitutes nervous force; and on the other, they are the most powerful of hæmatogens, being infinitely superior to all medicines of that class hitherto known. They seem to possess in the highest degree all the therapeutical properties formerly attributed by different observers to phosphorus itself, without any of the danger which attends the use of that substance, and which has caused it to be almost forgotten as a medical agent. The different preparations of hypophosphorous acid will, according to these views, occupy one of the most important places in the Materia Medica.

Art. 21.—*A new case of Amyloid Degeneration.* By Dr. Rud. Virchow.

(*Archiv f. path. Anat. u. Physiol.*, Feb., 1857.)

This kind of degeneration has often presented itself to the notice of the author, but not to the same degree as in the present case.

Case.—A woman of a certain age, suffering from Bright's disease, with dropsy, died on the 5th December, 1856. On examination, the two kidneys, the spleen, and the liver were found to be enlarged and transformed into amyloid matter.

The spleen, weighing 473 grammes, was almost entirely transformed into amyloid matter. It had the appearance of being congealed. The small

arteries of the kidneys and the Malpighian bodies had undergone the same transformation. The hepatic cells were healthy, but the small vessels of the acini were affected. The liver itself weighed 2687 grammes. The intestine presented a peculiar anæmic, translucid, palish gray, puffy appearance, and on examination the vessels of the villosities were almost all affected with the degeneration in question. In certain parts this change had extended to the substance of the coats of the bowel. The urinary and genital organs were also considerably affected, particularly the uterus, which was hypertrophied, and yellowish-gray in colour. The microscopic and chemical evidences of starch were almost everywhere present.

In a word, Professor Virchow found starch in every organ examined—in the heart, in the lungs, in the nerves, &c.; and everywhere the signs were unmistakeable. The characteristic blue colour was brought out either by iodine alone, or by iodine in conjunction with sulphuric acid; and when the last mode of testing was employed slowly, this colour remained intact for six weeks.

Art. 22.—*On the Ferruginous treatment of Primary Syphilis.* By Mr. Henry Behrend, of Liverpool.

(*Lancet*, Nov. 15 and Dec. 20, 1856.)

Following the example of M. Ricord, Mr. Behrend prescribes the potassio-tartrate for internal administration in the form of a solution of one part of the salt to six of water, of which two teaspoonfuls are to be taken three times a day, or according to circumstances: and he uses a solution of the same strength twice or thrice a day as a local application to the part, diminishing the frequency of the application as the case progresses towards a cure. With very rare exceptions, no other remedial agent is employed. It is necessary to give instructions to the patient to be careful in the application of the lotion, as he is extremely liable to remove the lint roughly, and take away with it an incipient cicatrix or healthy granulations.

In illustration of this practice, Mr. Behrend relates several cases, and respecting them he says, "nearly all the cases above related remained under my supervision, as one of the medical officers of the regiment, for many months, some for a year, subsequently to their discharge from hospital. *Not one had a single symptom of secondary syphilis. I have not had a single case of secondary or constitutional syphilis after treatment with the potassio-tartrate of iron alone, either in hospital or private practice, and the only two instances in which secondary symptoms have appeared since I commenced this plan of treatment have been in cases where I combined the iron with the mercurial treatment.*"

Art. 23.—*Illustrations of the Aguish Disorder prevalent in London during the last two or three years.* By Dr. C. Handfield Jones, Physician to St. Mary's Hospital.

(*Proceedings of Royal Med. and Chir. Society*, i, No. 3, 1857.)

The author, while expressing a doubt whether the cases selected presented any very striking points, was of opinion that the series was

not without value as illustrating a frequent character of disease, and he hoped that their consideration might shed some light on various morbid phenomena of common occurrence, yet but imperfectly understood and often misinterpreted; and so might render their treatment more rational and satisfactory. He wished the cases to be regarded as experiments in which the nature of the morbid action was to some extent inferred from the mode in which it was affected by remedial agents. He did not consider the evidence demonstrative, he only claimed for it that the inferences should be regarded as highly probable. Information of this kind, though very imperfect, may after all be of far more use than the most exact determinations of the balance and the microscope.

He premised the following statements:

1. That local heat, congestion, and sometimes inflammation, may be produced by paralysis of the vaso-motor (sympathetic) nerves of a part.

2. That the phenomena of fever can be well accounted for on the view of paralysis of the sympathetic system.

3. That there is good reason to believe that neuralgia and dysentery may be the exponents of malarious influence as much as a true ague or remittent.

4. That there is much cause for believing that the vicinity of canals is unhealthy, and that they generate a poison producing effects like those of malaria.

5. That the evidence respecting the production of malaria is such as makes it impossible to affirm that it may not be generated by any moist surface in the process of drying.

6. That in cases of obscure and refractory character, the reaction of the system towards remedies, and the effect of change of air may afford most material aid towards forming a correct idea of the cause and nature of the disease.

7. The term malarious disorder, as used by the author, is not intended to assert that the essential cause is always identical with marsh miasm; but to convey the idea of a disorder, which, however produced, is exceedingly similar to intermittent and remittent fever in many respects, maintaining the same pathological affinities, operating on the same (nervous) system, and requiring the same treatment.

8. The primary action of fever-poison, most notably of malarious fever, is paralysing and depressing, affecting especially the nervous system. The most deadly fevers are the algide, in which reaction never occurs; the phenomena usually called febrile are, if the excitement be not over great, a desirable indication that the system rallies and resists the morbid influence. Hence, if, where there is no intense malaria, a patient suffer from continual, exceeding, causeless (apparently), depression and debility, occasional chills and flushes or perspirations, with an interlude of neuralgia at times, or a dysenteric or rheumatic attack, and if benefited materially by quinine, iron, &c., and most of all by change to a healthy locality, the inference that he laboured under some aguish disorder seems legitimate. The system is habituated to the morbid action, and does not react strongly against it.

9. The tendency to relapse is most difficult to eradicate. Any cause of a debilitating kind will almost surely reproduce the morbid action in some form or other.

He then gives the details of the following twenty-one cases:

1. Obscure aguish disorder.
2. Rheumatic nasal inflammation.
3. Cerebral attack; epistaxis. Benefit from quinine.
4. Cerebral attack; failure of cerebral power. Benefit from ferrocitrate of quinine.
5. Vomiting; febricitation; head-pain; exposure to ague-poison. Cure by quinine and strychnia.
6. Cerebral attack. Canal influence.
7. Scrofulous; epileptoid seizures. Cure by ferrocitrate of quinine and nux vomica.
8. Hemiplegia in a neuralgic subject. General tonic treatment. Recovery.
9. Hemiplegia, first of right afterwards of left side. Canal influence.
10. Rheumatism of the œsophagus. Canal influence.
11. Rheumatism; thoracic neuralgia; depression. Canal influence.
12. Cardiac neuralgia paralytica; slight hæmatemesis. Cure by quinine and iron.
13. Rheumatoid and intra-thoracic neuralgia.
14. Severe cardiac neuralgia; aguish attacks.
15. Periodic gastralgia. Cure by quinine and iron.
16. Rheumatic abdominal neuralgia.
17. Febrile affection; lingual neuralgia. Cure by quinine and iron.
18. Dysentery and aguish disorder. Cure by quinine and opium.
19. Dysentery; rheumatism. Crimean origin.
20. Nervous prostration; hæmorrhage from stomach. Benefit from change of air, cinchonine, and strychnine.
21. Fugitive œdema recurring frequently in various parts. Cure by sustained tonic treatment.

The author then proceeds to cite ten instances in which more decided ague was originated or developed by a residence in London. In conclusion he draws the following deductions:

1. There seems much reason to think that an obscure form of aguish disorder prevails in (at least) the western parts of London; the phenomena being chiefly great debility, hyperæsthesia, failure of cerebral power, neuralgia of external or internal parts, gastric disorders, rheumatic affections, and ill-developed febrile paroxysms. Quasi-apoplectic seizures are not uncommon.
2. Quinine, iron, and strychnine are found of decided benefit, with a generous diet.
3. Change to a pure air is the best remedy.

It must be apparent that, if there be any truth in the foregoing views, those who ignore them entirely must practise at great disadvantage, and meet with continual disappointment. The opinions advanced in the paper were mainly derived from Dr. Macculloch's writings, whose opinions are strongly corroborated by Dr. Copland.

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 24.—*Case of Cerebral Apoplexy without characteristic symptoms, &c.* By Dr. HILLAIRET.

(*L'Union*, 57, 1857; and *Schmidt's Jahrb.*, vol. xcv, No. 9, 1857.)

After some observations on the rare occurrence of cerebral apoplexy without lesion of sensibility and especially without lesion of motility, Dr. Hillairet relates the following case, which is rendered still more interesting by the fact that the head affection was accompanied by gangrene of the lungs. It is to be regretted that the condition of the veins at the base of the skull and in the neck was not examined.

CASE.—The patient was a man, æt. 64, who for fourteen days before his admission to the Hospital for Incurables at Paris had suffered from acute and abiding pain in the head, with loss of appetite, but who had nevertheless been able to walk about as usual. When admitted (10th February, 1856) the eyes were brilliant and the patient talked incessantly in a loud voice, without any defect in articulation, but also without the least sense in what was said. His manner was very eager and excitable. Sensibility and motility were everywhere perfect, and the only equivocal sign to be detected beyond the head were a few moist râles at the back of the chest. Pulse 72. After free purging the excitability became diminished, and the meaning of questions seemed to be better understood, but the answers were still in disconnected monosyllables. Pulse and respiration quiet; no expectoration. The patient was bled and blistered without any evident impression upon the symptoms.

February 16th.—Intelligence and memory returned; no pain; sensibility and motility perfectly normal. Calomel had been given during the last two days, but the mouth not at all affected. The breath of a gangrenous odour. On examining the lungs, the posterior-inferior parts on both sides, especially the left, were found to be dull on percussion and filled with fine moist râles; but there was neither cough nor expectoration.

17th.—A slight rubbing sound at the inferior angle of the left shoulder-blade, and the râles which were heard over the whole of the lung on this side were especially loud at this point. No pain in the chest. Pulse and respiration, normal; also sensibility and motility. Bronchial breathing in the left axiilla. The breath still more fetid.

20th.—Loss of consciousness; this came on in the evening, which chanced to be extremely cold and wild, with frost and snow.

24th.—Death, without any alteration of the previous symptoms.

Post-mortem examination.—In both pleural cavities old adhesions; the lower half of the right lung solidified and deeply congested, the upper half normal. The left pleural cavity divided into compartments by old adhesions, and one of these communicating with a large cavity in the substance of the lung, apparently the result of a previous state of gangrene. Surrounding this cavity the substance of the lung was to some extent affected with gangrene.

On opening the skull a considerable quantity of serum escaped, and the membranes were found to present many firm adhesions and other signs of old inflammations. The arteries at the base were in an atheromatous condition. In the middle of the under surface of the posterior lobe of the left hemisphere was a dark spot evidently the sign of an extravasation of blood within the brain. On opening the brain the left lateral ventricle was seen to be distended with blood, and the walls of this cavity were in many places softened and broken down. A smaller extravasation was in the cornu ammoni. The rest of the brain was healthy.

Art. 25.—*On alternate Hemiplegia.* By Dr. A. Gubler.

(*L'Union Médicale*, Sept., 1857; and *Edinburgh Med. Journ.*, Nov., 1857.)

Dr. A. Gubler, Professor "Agrégé" of the Faculty of Medicine of Paris, describes a variety of hemiplegia which he has denominated "alternate," in imitation of the term employed by botanists, in reference to the mode in which the leaves are arranged on the branches of some trees. The peculiar characteristic of this form of the disease, consists in the face being paralysed on the opposite side to that on which the limbs are affected—the general rule being, that both the face and limbs are paralysed on the same side.

Dr. Gubler details a case which occurred in his own practice, and cites others recorded by Professor Forget, M. Poisson, and M. Senac, and as the result of his inquiries, comes to the following conclusions:

1. Cerebral hemiplegia, properly so called, is always confined to one side.

2. In the less numerous variety of cases of alternate hemiplegia, the lesion is situated in the pons varolii.

3. The lesion always exists, exclusively or principally, on that side opposite to the paralysed limbs, and on the same side as that on which the face is affected.

4. Sensation and motion may be impaired on one side of the face, in consequence merely of the pons varolii being affected as well as when the disease implicates the nervous trunks themselves. In this way, alternate hemiplegia should be considered as indicative of some lesion in this structure.

5. From the connection of these two facts in the history of facial paralysis, namely, that the action crosses in lesions confined to the cerebral hemispheres, while it is direct in those of the meso-cephalon, it follows that the facial nerves cross each other in the substance of the "isthmus." Above the decussation, the action is crossed; below it is direct; nothing is more easy to be understood.

6. This inference, legitimately drawn from pathological facts, is moreover warranted by the latest researches of anatomists who have attempted to elucidate this matter, both in France and Germany, particularly the results obtained by MM. Vulpian and Philippeaux.

7. Pathology further exhibits to us that the decussation of the facial nerves must be complete, since lesions of the pons varolii entail complete paralysis of the corresponding side of the face, to the exclusion of that opposite.

ART. 26.—*A case of Hemiplegia with Paralysis of the same side as that of the Cerebral Lesion.* By Dr. EADE, Physician to the Norwich Dispensary, &c.

(*Lancet*, Aug. 8, 1857.)

This case appears to be a genuine example of that very rare condition of disease, in which the paralysing lesion exists on the same side of the body as the paralysis itself. So rare is it, that Dr. Watson ('Lectures on Physic,' vol. i) refers to only two such cases, Dr. Todd (article Paralysis in 'Cyclopædia of Medicine') to only four, and Dr. Bennett (in 'Library of Medicine') speaks of being acquainted with only twenty-one similar ones as having ever been published. Moreover, the tone of all the authors whom Dr. Eade consulted on this subject was such as to imply a doubt of the authenticity or trustworthiness of the descriptions in these exceptional instances, or at least to cause it to be inferred that even in them the real paralysing lesion existed (though perhaps overlooked or unappreciated) as usual in the opposite hemisphere.

It may, perhaps, be urged that as in this case a distinct lesion was found after death in the right half of the brain, therefore there is no need to suppose any exceptional direct, instead of crossed, nervous influence. But it appears that, although such an explanation of the phenomena is *possibly* the true one, yet the whole train of symptoms during life, as well as of the morbid appearances after death, are entirely opposed to such a supposition; for—

1. The primary seizure was one of acute disease, apparently hæmorrhage, with either active congestion or inflammation, and probably of a gouty character.

2. The paralysis came on suddenly, and was doubtless due to the clot found on the outer side of the left corpus striatum. This clot was small (thus accounting for the slight affection of consciousness), and had not the appearance of being a hæmorrhage resulting from softened brain substance; for although not distinctly encysted, the cerebral matter immediately around it was sufficiently dense, and it was only externally to this that it became very soft and diffluent.

3. The amount and degree of softening were infinitely greater on the left side than on the right.

4. The mass of tumour in the left hemisphere was as large as a good-sized walnut; that in the right scarcely bigger than a pea, and utterly insignificant in comparison with the other.

5. The paralysis of the eye and eyelid, a few days after that of the limbs, was on the left side.

6. There was no atheromatous disease of the cerebral arteries.

7. It is worthy of remark, that the former attack of paralysis of the arm was on the left side, and that the morbid appearance which best accounted for this—viz., an old organized patch of lymph on the inner surface of the centre of the parietal bone, was on the left side also.

For all these reasons, Dr. Eade inclines strongly to the opinion that the paralysing lesion existed in the left hemisphere, that the disease

found in the right was secondary in point of time, and that the influence exerted upon the limbs was direct instead of crossed. Dr. Eade also regrets that he did not examine minutely the medulla oblongata, with a view to the possibility of the existence of an abnormal arrangement of the fibres of its anterior pyramids (a possibility suggested by Dr. Bright), which, if present, would form a ready explanation of the direct influence exerted in the two attacks of paralysis.

Case.—J. G—, æt. 34, a well-formed and average-sized man, by trade a plasterer, became a patient at the Norwich Dispensary, in September, 1856, on account of a recent attack of head-symptoms accompanied by hemiplegia. His history was this: For many years previously he had suffered from occasional attacks of what he called rheumatic gout, the last having occurred only a few weeks before the present seizure. Although not exactly intemperate, he had always been in the habit of drinking freely of beer. Ten or eleven years ago he had chancres on the penis. Two years after this he had a slight attack of paralysis of the left arm, from which he soon recovered. Three years later he suffered from ulcerations of the scalp; and after these had healed he remained in good health until about five weeks since, when he began to suffer from headache, chiefly frontal, with drowsiness and disturbance of the function of sight. This was followed by an attack of sickness and diarrhœa; and after recovery from this, he, four days ago, suddenly found himself unable to articulate and paralysed in the left arm and leg. There was no hereditary predisposition to gout or apoplexy, and no known cause for the present attack.

Symptoms, when first seen by me on September 8th, four days after seizure: Hanging of left cheek; indistinct articulation; inability to whistle or blow with his mouth; slight numbness of the paralysed cheek; protrusion of tongue to the left side; paralysis of left arm and leg, complete as to motion, less absolute as to sensation; diminution of reflex action in paralysed leg; pain of head, referred to the vertex, with much heat of scalp; dilatation of pupils, these being equal, contracting considerably when first exposed to strong light, but almost immediately returning to their former state; laboured and weak pulse, at 60; easy respiration; consciousness unaffected, and intellectual power very slightly impaired. No signs of lead-poisoning or of heart disease.

In the interval between the commencement of his illness and his death—a period of nearly eight months,—he suffered repeated exacerbations of the symptoms of congestion and pressure within the head. About a week after his seizure, he for a short time completely lost the sight of the left eye, the pupil becoming larger than its fellow, and the upper eyelid drooping. Soon after this, the reflex actions in the paralysed leg became completely abolished.

In October, he suffered from severe pain, without either swelling or redness, in the right knee, which lasted several weeks, and was quite uninfluenced by remedies.

In December, several spasmodic or convulsive seizures occurred, and in one of them he was found stretched across the bed almost in a state of œpisthotonos. His mind had now become much enfeebled, and he had a distinct attack of gouty inflammation in the left elbow.

In January, 1857, he continued to become more and more childish. The sphincters were only imperfectly under control. He had a slight cough, and was observed to be losing flesh fast.

In February, the flexor muscles of the paralysed arm had become very

tense and rigid, so that attempts to straighten the limb caused very great pain. Voluntary power over the leg was much increased.

He died in April, sinking gradually from exhaustion, death being preceded by expiratory puffing of the cheeks, frequent convulsive tremors of the muscles of the neck and face, apathy and imperfect coma.

Dissection, April 25th, 1857, twenty-four hours after death.—Head: The parietal and frontal bones marked on their outer surface by several pits or depressions, the largest as big as a shilling, evidently cicatrices of old ulcerations. At these places, the bone was found to be quite thin and translucent; and to the inner surface of one, situated in the centre of the left parietal bone, the dura mater was adherent by an old organized patch of lymph. The arachnoid milky nearly everywhere, and quite opaque where it covered the right hemisphere and the base of the brain. A large elongated patch of enormously-developed Pacchionian bodies on the internal edge of right hemisphere, to which the dura mater adhered intimately. At the base of the skull, in one small spot upon the posterior part of the right petrous bone, the dura mater was almost absorbed, leaving only the transparent arachnoid membrane. The anterior surface of both petrous portions of the temporal bones so much thinned by absorption as to leave the slightest possible covering of areolated bone to the internal ear. Pia mater vascular; the cerebral substance somewhat congested; no apparent disease of the arterial system. On opening the left lateral ventricle, the corpus striatum and adjacent part of hemisphere were seen to be more prominent than natural, and had a gelatinous appearance, as if both œdematous and softened. At the junction of the left corpus striatum with the hemisphere was found the remains of an old clot, the size of a horse-bean, the blood being semi-fluid, and like to inspissated bile. The cerebral substance around it was softened, but not discoloured; the substance of the corpus striatum itself was infiltrated with serum, and softened, and occupying its outer and anterior part was a firm, greenish-yellow tumour of irregularly-elongated form, about equal in bulk to a walnut, and surrounded by softened and discoloured brain. On the right side, situated in the hemisphere, just external to the corpus striatum and optic thalamus, was a small mass, similar in appearance to that found on the other side, consisting of two small rounded nodules, the size of swan-shot, adhering together by a sort of pedicle, and surrounded by softened cerebral substance.—Chest: Old adhesions of pleuræ, chiefly on the left side. At apex of the left lung were some small tubercular masses, some of them in a state of incipient calcification.—Abdomen: Liver large, adherent by old false membranes, to the peritoneum, its structure granular and almost nutmeggy; kidneys large and congested; a little purulent fluid in the pelvis of the left.

The cerebral tumours appeared to be composed of a low form of fibrinous exudation, and showed, as their microscopical elements, a granular blastema, containing a large quantity of free oily-looking dots and granules, and corpuscles of various sizes and shapes containing granular matter, and the same bright looking dots, so many of which were seen floating free.

Art. 27.—*On slowness of the Pulse as an effect of compression of the Brain.* By M. C. H. von Zengerke.

(*Archiv für Physiolog. Heilkunde*, t. 2, 1857.)

On examining certain dogs in which an opening had been made in the skull, M. Zengerke found that the pulse invariably became re-

tarded when the brain was pressed upon by the finger. This phenomenon, he considers, is accounted for by the compression of the par vagum under the brain, and not by any direct effect of the pressure upon the brain itself.

Art. 28.—*A case of general Anæsthesia.* By Dr. Klaatsch.

(*Deutsche Klinik*, No. 45, 1856; and *Med. Times and Gaz.*, June 20, 1857.)

Case.—Dr. Klaatsch relates the case of a widow, æt. 58, who applied to him on account of severe pains in the extremities, and a powerless state of the upper ones, which prevented her from grasping any object firmly. She also complained of an unrelievable sense of hunger. In other respects, with the exception of occasional headaches, she was quite well. She had had nine children, still menstruated moderately, and exhibited no symptom of hysteria. A charwoman by occupation, she attributed her present symptoms to chills. An examination exhibited no appearances of paralysis, but the sense of feeling was lost over the entire skin and orifices of the mucous membranes, and could not be excited by pricking with needles. No unpleasant feeling was excited by irritating the nares, the conjunctivæ, or the mucous membrane of the mouth, and the fumes of ammonia produced no effect upon the respiratory organs. Boiling water and a prolonged application of the electrical pencil alone induced some feeling on the surface. The sense of contact was retained, and she was enabled to exactly indicate the spots at which she had been pricked. The power of distinguishing between differences of temperature was abolished, but the muscular sense remained, as she was conscious of the position of her limbs, and could determine the weight and size of a body by grasping it. The senses of taste and smell were lost, and both hearing and vision were somewhat defective, although she had not before observed diminution in their power. The reflex excitability was very slight, the rapid application of hot sponges exciting but slight movements; tickling the fauces did not induce any disposition to vomit.

After the patient had remained some time under observation, and her condition was found to be stationary, the Russian vapour-baths were tried, but without any avail. The electrical pencil was next applied to the two forearms and the left side of the face; and after three *séances*, not only was feeling restored to these parts, but it was recovered also by the remainder of the surface and the mucous membranes; taste and smell were restored, and the sense of unappeasable hunger disappeared.

Most of the analogous cases on record have been observed in hysterical subjects; but in this one no symptoms of hysteria whatever were present.

Art. 29.—*Case of Sciatica treated by subcutaneous opiate injections.* By Dr. Bonnar, of Cupar, Fife.

(*British Med. Journal*, Aug. 29, 1857.)

Before adopting the treatment by subcutaneous injections, as recommended by Dr. Alexander Wood (*v.* 'Abstract,' XXI, p. 39), two months had been passed in a fruitless attempt to obtain relief by other means—iron, iodide of potassium, colchicum, arsenic, &c., internally; aconite, irritating liniments, cauterization, &c., externally. The patient

Mrs. P—, a stout, active lady; age not given. The time, October 6th, 1857. The effect of the subcutaneous injections are thus described:

"Having ascertained which was the most painful spot, by means of careful pressure along the seat of pain, just where the nerve escaped through the notch from the pelvis, he inserted the perforated steel nozzle of a small glass syringe, into the graduated body of which had previously been put twenty minims of Battley's sedative solution; and after the instrument had penetrated about an inch and a half, the fluid was sent home with gradual and firm pressure. The effect was instantaneous. The patient immediately began to saw the air with her hands, as if in a deep dream; in a few seconds they dropped powerless; her breathing became long and deep, and she lay in a profound sleep. This continued until an early hour next morning, when she awoke refreshed and reinvigorated, as if from a night's natural rest, the first she had had for many a long week; to her great delight, she was completely free from pain, and able to move her limb very readily without uneasiness. This was, however, too sudden and too complete to be expected to last long; there was still an acute twinge of pain when the thumb was pressed firmly down on the spot; but the patient was so delighted with the general effects of the treatment, that she readily, nay, anxiously, submitted to its frequent repetition.

"Oct. 6th.—7 a.m. Twenty minims of Battley's solution were injected into the hip, which did not seem to produce the same immediate effect as last night's application.

"6th.—8 p.m. The patient had slept most of the day. The pain had disappeared; it was very obtuse at the hip on pressure, and more acute down the limb, but not at all of that lancinating character it was before. As the peroneal nerve seemed to be the part in which there was most pain, ten minims of Battley's solution were there injected, and the patient was left for the night.

"7th to 10th.—The same treatment was continued morning and night, injecting at the one visit into the hip, and at the other into the leg, choosing the most painful parts, as indicated by pressure. The quantity was increased to forty minims daily.

"11th.—The remedy was intermitted; but the pain, on the day following, threatening to return a little more severely than before, it was resumed for four days more, at the end of which time the pain had entirely disappeared (even on testing the state of the nerve by a smart blow) from the regions of the hip and leg, and was confined to the region of the external malleolus. The treatment was discontinued from this date, with the exception of two occasions, October 20th and 23d, when on the former twenty, and on the latter thirty, minims were injected in front of the tendo Achillis, where the pain lodged very severely, but was relieved by the injection.

"After this, the pain seemed to spread itself all over the dorsum of the foot, where at times it was very severe. Instead of further employing this new cure, which seemed to be now inapplicable to the case, from the very superficial seat of the pain, and the great extent of surface over which it spread, I recommended the cold douche every morning, and to be continued each time as long as it could be borne by the patient. This was faithfully persevered in, and after a short period the pain became much modified, and of quite a chronic character; in fact, it seemed to degenerate into a kind of nervous rheumatism of the part, and indicated the changes of weather in regard to rain, frost, thaw, &c., by those peculiar gnawing sensations which all martyrs to rheumatism so well know by their experience.

"At this date (August, 1857), nearly two years after the occurrence of the above case, the patient enjoys very excellent health, and never experiences the slightest throb or pain in the limb. She told me jocularly, not long ago, that she almost forgets which limb it is which was affected."

ART. 30.—*Tubercles of the Crus Cerebelli, with symptoms simulating Chorea.* By Dr. SHUTE, Physician to the Torbay Infirmary.

(*Lancet*, July 18, 1857.)

Tubercle of the brain, though common in children, is rare in adults. Many of the cases recorded moreover are not sufficiently exact to be of much value. Dr. Shute's case is as follows:

CASE.—Elizabeth S—, æt. 26, married three years, no family, was admitted under my care March 11th, reported to be suffering from chorea. She presented the following appearance: Countenance not sunken nor pallid, and not evidencing pain; features not distorted; muscular and adipose tissues sufficiently developed; tongue furred, protruded with a jerk; head constantly moving to the left side; articulation very imperfect; understands and answers everything that is said to her; constantly talking whilst awake; left arm in perpetual movement, being jerked across the chest (during sleep the convulsive movements cease, and she is quite tranquil); total inability to support herself on her legs, but she can move them up in the bed; sensation not affected; has a constant short cough, as if caused by accumulation of mucus; pulse 90; urine acid; no albumen. There was much difficulty in examining the chest. Left side appeared duller than right; mucous and sub-crepitary râles, with respiratory sounds of the diffused blowing type, on that side.

The history of the case was very obscure. We could not ascertain that she had ever complained of headache; had had occasional cough for two years; had never spat blood. Four months since, whilst out walking, she suddenly fell against a wall, but without loss of consciousness, since which time she has been in her present condition.

Diagnosis.—Organic disease at the base of the brain, probably softening, near the pons Varolii; tubercular disease of the left lung. She was ordered blisters to the calves of the legs; compound ipecacuanha powder, ten grains.

March 12th.—The Dover's powder had been repeated, and at the period of the visit she was in a profuse sweat, and in a quiet sleep; the movements of the arm had ceased.

13th.—Still quiet; takes her food when roused.

14th.—Very noisy; movements of arm and head have recommenced. Ordered, acetate of morphia, potassio-tartrate of antimony, of each one grain; water, one ounce: one drachm to be taken every three hours till she was quiet.

15th.—Only two doses of mixture had been taken, and she was in such a state of prostration as to require brandy and ammonia to rouse her.

16th.—Recovered from the state of prostration; movement of arm had ceased, and did not return; right pupil dilated; contracts under the influence of light, but dilates again immediately.

She died on the 6th of April.

Autopsy, forty-eight hours after death.—Vessels on convexity of brain congested; arachnoid membrane adherent along the upper and posterior edge of the longitudinal fissure; no evidences of recent inflammation of the membranes; consistence of brain firm, somewhat congested; no effusion into the

ventricles; in slicing downwards, no appreciable lesion discoverable. At the base of the brain the right crus cerebelli was softened to the depth of a line on its anterior aspect, and in its substance were imbedded three crude tubercles the size of a pea, one in the centre, and two on each side, forming a triangle. The lungs were not taken from the thorax, but the posterior portion of the left was infiltrated with crude and softened tubercles.

Art. 31.—*Case of Hysterical Tetanus.*
By Mr. Edward Furley, of Town Malling, Kent.

(*Proceedings of the Royal Med.-Chir. Society*, vol. i, No. 3, 1857.)

Case.—The subject of this communication was one in which symptoms of what appeared to be in the first instance aggravated hysteria, were ultimately associated with others more distinctly tetanic. As a child, she had, at two years of age, an attack which was supposed to be encephalitis. At seven, she had severe scarlatina, followed by discharge from both ears. She grew up a delicate girl; menstruation appeared at twelve; and at this time nervous symptoms began to show themselves. At the age of sixteen her more serious illness began, after severe mental shock, with pains in the pelvic region of spasmodic character; in consequence of which she would jump out of bed, and run about the room screaming violently. There were various anomalous symptoms observed in succession, in which she seemed to undergo much suffering, and her screams were occasionally such as to alarm the neighbours.

"In the month of June, 1855," says Mr. Furley, "I took her to London, and held a consultation on her case with an eminent physician whose practice and investigations were more particularly connected with the diseases of females. This gentleman regarded the case as one of severe hysteria, but that there was no organic disease of the uterus. His prognosis was unfavorable, and, with his approbation, she went to Hastings, where she remained for seven weeks. At this time her circulation was feeble, and there appeared no disease of the heart; the appetite in some slight degree returned, but she was not otherwise improved; on the contrary, the screaming fits and convulsions were increased in frequency and violence; globus hystericus at times threatened suffocation, and she complained of pain and palpitation about the heart. At this time spasmodic contractions of the lower extremities came on, and she had some delusions, such as an appearance of the sprinkling of blood upon the wall, a duplicate likeness of herself, or rather her *very* self walking about the room; her fingers occasionally moved as if at crochet work, and she repeated lessons which her governess had taught her years before. At this stage of her illness she was seized with attacks of head-shaking, or a frequent bowing of the head forwards, so that the chin struck the first bone of the sternum with an audible jerk. This movement I witnessed myself on one occasion; and I have been told that as many as from three to four hundred of these noddings have been counted in succession, occurring almost as frequently as the pulse. On one occasion, when sickness had been induced by an emetic, the jaw was dislocated, and I was sent for and reduced it in the ordinary way.

"After she returned home her general health and symptoms improved a great deal for about a fortnight; she took exercise daily in a pony-chair, and her appetite improved also. For three nights only she was free from the contractile pains; she slept well, enjoyed her food, and great hopes were entertained of some decided amelioration: unfortunately, on the fourth night her rest was disturbed by some intoxicated persons shouting below her window; they threw also a stone which shattered the glass, after this all the old

symptoms gradually returned with more violence than ever, and the curious methods in which she sought a temporary relief from them are almost beyond belief. At one time she would desire to be placed before a table, where she would kneel for some time, bearing down with considerable force, like a person in labour, until she sank on the floor in a state of insensibility; at others she would lie on her face, with her legs secured to each bed-post, and kept as much on the stretch as it was possible; she felt then 'as if she was being *hacked* asunder;' when the legs were released they were drawn up forcibly, the heels striking against the back. At other times she preserved a straight and rigid horizontal posture; her breathing was slow, and she seemed to be asleep, but suddenly she would utter a loud shriek, rock herself violently to and fro, and frothy saliva would issue from her lips; opisthotonos followed, the back of the head more nearly approaching the heels than I have ever seen, except in young children brought up as posture exhibitors. Emprosthotonos was less frequent, and did not last so long.

"Once more she was taken up to London for advice, and she saw the physician of one of the hospitals, who was desirous of trying the effect of isolalation from her family, but her relatives could not make up their minds for her to remain. From November, 1855, to September, 1856, she found the head relieved from what she called a 'rushing of hot blood,' by being suspended from the canopy of the bed; at first she was satisfied by being slung by the hands and legs, like a hammock, whilst she inclined the head downwards; she next directed that her feet should be fastened to the top of the bed, whilst her head hung down and nearly reached the floor; in this posture she would never remain less than an hour, till her face became livid, and sometimes the contents of the stomach were ejected; when exhausted, she directed her friends to replace her in bed, where she slept, or became for a time unconscious. During the last three months of her life she would ask to be lifted out of bed, and would glide in a serpentine way on her back over the floor, saying that she felt irresistibly drawn along, complaining all the time of excruciating pain along the spine, for which she requested the attendants to strike her a succession of sharp blows on the back; after this there was a series of paroxysms—the legs drawn apart with violence to their extreme limit, emprosthotonos and opisthotonos occurring, and convulsive actions of every part of the body. Within a fortnight of her death, although much reduced in strength and bulk, she suddenly vaulted on her feet from the horizontal posture, without appearing to flex her limbs in doing so. In the early part of her illness she complained of pain in the epigastric region, increased after eating, which gradually became more and more severe. Her diet was very scanty, and of the most miscellaneous description, but there was no craving for out-of-the-way things. Fruit, vegetables, and fish, were her usual food; for a fortnight she lived on tea and dried cherries. When the pain came on she had no relief until it was followed by sickness, unless she took strong aperient medicine. When my attendance ceased she got into the habit of swallowing a number of Morrison's pills as soon as she had taken the one meal a day which she restricted herself to: commencing with four for a dose, she gradually increased them to the almost incredible number of from 170 to 175 per diem!

"In the summer of 1856 she suffered much from tympanites. What she vomited was at first merely mucus and food; in September it was once stercoraceous, and this happened again two months afterwards.

"She slept very little, and generally dreamt, but awoke quietly and collected; she was then very soon attacked by violent spasms. In the paroxysm the eyeballs were generally drawn up, and the eyes prominent; there was

twitching of the features, and the teeth ground audibly; the tongue was not often bitten, but occasionally it was drawn out. She swallowed with tolerable facility when free from the attack. There was aphonia for a few hours at times, but this was a consequence of exhaustion. Whilst at Hastings her attacks resembled catalepsy in some degree. There was never hiccough or active delirium; her reasoning powers were unaffected, she sometimes took a prejudice to her mother, but this ceased during the last year. For thirteen successive hours she has been insensible, but she did not then appear comatose—more like 'a person in a trance.' At one time homœopathy was tried by one of its professors, but she soon lost faith in it, and, I need not add, derived no advantage from it. From Thursday, the 12th, to Saturday, the 14th of February, she took no food; the bowels became relaxed, and continued so for two days, producing much exhaustion; the last sensation she complained of was of something being torn from her right hypochondrium. No convulsive attack preceded her dissolution, she was perfectly aware of its approach, and anxiously looked forward to the end of so much suffering and distress. There was great restlessness, and she had as many as four warm baths in quick succession; and at length death ensued from simple asthenia, at the age of eighteen years and eight months."

Post-mortem examination.—Emaciation extreme. Cranium large and thin; arachnoid opaque; a good deal of subarachnoid fluid. Brain large; lateral ventricles each containing about half an ounce of serum; substance normal. Spinal cord was firm and natural in every portion; arachnoid opaque. The heart was small, but healthy; slight pleural adhesions at the upper part of the chest, and firm consolidation of one portion of the right lung. A pouch-like dilatation of the duodenum existed at its lower portion; in other respects all the abdominal viscera were healthy. The uterus was small, but showed no indication whatever of disease.

Art. 32.—*Camphor in Tetanic Spasms.* By Dr. J. S. Perry.

(*Charleston Med. Journal and Review*, May, 1857.)

Dr. Perry relates two cases of tetanic spasms, in which camphor in four, five, and seven grain doses was given every four hours, but calomel, opium, compound ipecacuanha powder, chloroform inhalations, chloroform liniments to the spine, warm baths, &c., were associated with the camphor, and therefore it is difficult to say how much of the success is attributable to the camphor, at the same time we think it desirable to refer to the fact, not only because camphor had already been employed with apparent advantage in tetanic symptoms arising from strychnia (*v.* 'Abstract,' XXV, p. 50), but because we think the successful treatment of any form of tetanus demands the employment of stimulating remedies like camphor.

Art. 33.—*On the use of Bromide of Potassium in Hysterical Epilepsy.* By Sir Charles Locock, Bart.

(*Medical Times and Gazette*, May 23, 1857.)

At a late meeting of the Royal Medical and Chirurgical Society, after a paper on epilepsy, Sir Charles Locock made the following

remarks upon a form of epilepsy which he calls "hysterical epilepsy," and upon the use of bromide of potassium in its treatment:

"There was," he said, "a form of epilepsy to which special notice had not been drawn, and which he had been in the habit of regarding as hysterical epilepsy. It was confined to women, and observed a regularity of return connected with the menstruation. It was as baffling a form of epilepsy as any other. The paroxysms only occurred (except in the case of great mental excitement) at the menstrual period. Having been often baffled in those cases, of which he had seen a considerable number, he had been led within the last twelve months to try a remedy, which had so far answered his expectation that he thought it desirable that it should have a larger trial, by being made known to a larger number of persons. Some years ago he chanced to see a paragraph in the 'British and Foreign Medical Review,' giving an account of some experiments that a German had been making with bromide of potassium. He found that by taking ten-grain doses three times a day for about a fortnight he became impotent, but upon leaving off the medicine his powers returned; he tried a similar experiment with others, and a similar result was produced. He, (the President) accordingly thought he would try bromide of potassium in many hysterical cases that he met with unconnected with epilepsy, in which there was a great deal of sexual excitement and disturbance, attended with various distressing symptoms difficult to manage; and he found that from five to ten grains given three times a day had the effect of calming the excitement to a very marked degree. About fourteen months ago he was applied to by the parents of a lady who had had hysterical epilepsy for nine years, and had tried all the remedies that could be thought of by various medical men (himself among the number) without effect. She began to take the bromide of potassium last March twelvemonth, having just passed one of her menstrual periods, in which she had had two attacks. She took ten grains three times a day for three months; then the same doses for a fortnight previous to each menstrual period; and for the last three or four months she had taken them for only a week before menstruation. The result had been that she had not had another attack during the whole of the period. He had tried the remedy in fourteen or fifteen cases, and it had only failed in one, and in that one the patient had fits not only at the times of menstruation, but also in the intervals."

ART. 34.—*Analysis of fifty-two cases of Epilepsy observed by the author.* By Dr. SIEVEKING, Physician to St. Mary's Hospital.

(*Proceedings of the Royal Med.-Chir. Society*, vol. i, No. 3, 1857.)

The 52 cases analysed had occurred exclusively under the author's own observation, and the conclusions were limited to points with reference to which satisfactory evidence could be obtained.

Sex.—24 were females, 46·15 per cent.; 28 were males, 53·84 per cent.

Age.—The following is the distribution of the cases throughout the different periods of life: Under 10 years, 17; from 10 to 20, 19;

20 to 30, 4; 30 to 40, 4; 40 to 50, 7; over 50, 1; or from infancy to the age of 20 years inclusive, 69·23 per cent.; from 21 to 40 years inclusive, 15·38 per cent.; from 41 to 55 years inclusive, 15·38 per cent. Arranged according to sex, we find during the first decennium, 8 males and 9 females; during the second, 12 males and 7 females; during the third, 2 males and 2 females; during the fourth, the same number of each; during the fifth, 2 males and 3 females; during the sixth, 1 female. The male sex, during puberty, therefore, seems to exhibit a more marked proclivity to epilepsy than the female; at later periods the ratio returns to the equality shown to prevail during the first ten years of life.

Causes.—Hereditary tendency could be traced only in 6 cases, or 11·1 per cent. A definite cause was assigned by the patient or the patient's friends in 16 cases, or nearly one third of the whole. Amongst these, otorrhœa is mentioned twice; fright, twice; injury to the head, twice. The cases differ in the relation they bear to the occurrence of the seizure.

Premonitory symptoms.—The occurrence of an "aura" is a point on which observers have expressed different opinions. Comprising under this term all the premonitory symptoms indicating the approach of a fit, it is noted in 27 out of 52 cases; the most common was a sense of giddiness, and impairment of vision; sometimes the patient suffered pain in a definite region of the body, or, though unable to explain the sensation, was aware of some change, from which they knew that a paroxysm was about to take place. The sensation was never described as a puff of wind or aura in its verbal sense.

Individual symptoms.—Headache is a very frequent concomitant of epilepsy. It was observed in 33 out of 52 cases, or 63·42 per cent. The mode of its occurrence varies; the patient either suffers habitually or very frequently from it, and the symptom bears no immediate relation to the paroxysm; or the headache occurs shortly before the fits, so as to usher them in; or, again, it affects the individual after they are over. It was constant or frequent in 36·5 per cent.; it occurred before the fits only in 7·7 per cent.; it occurred after the fits only in 17·3 per cent. Biting the tongue is justly regarded as an important corroborative symptom; but it is by no means uniformly present, nor does it constantly occur in the different paroxysms affecting the same individual. The tongue was bitten in 17 cases, or 32·7 per cent. The urine was tested for albumen in 19 cases, and it was found temporarily present in 1, permanently in 1. It was also tested for sugar in 14 cases, and this ingredient was not found once—a result which seems irreconcileable with the observations of Dr. Goolden.

Results of treatment.—The author ventured to express a feeling of scepticism with regard to the positive certainty of any cure of epilepsy. He believed that, in the majority, no organic lesion, in the ordinary anatomical sense of the word, is present in the commencement of the disease, and that, in a large number, none seems to result from the recurrence of the fits. It appears that a diathesis is necessary to its occurrence, and that this may be suppressed or held in check; but whether it may be eradicated, is a question which he would not venture to answer in the affirmative. He was satisfied of the power of

well-selected remedies in repressing, and often indefinitely postponing the paroxysm, and he particularly insisted on the importance of dietetic and regiminal treatment. The number of apparent cures was 15, or 28·85 per cent.; in other instances, more or less benefit was obtained. The duration of the disease before treatment is commenced has an obvious influence over its curability. Eight of the 15 (apparent) cures were wrought in cases that had lasted one year or under, four were of two years' duration, one of three, one of six, and one of eight years. The treatment adopted had varied with the nature of the constitutional affection in each case; but he was able to draw this general inference, that the main indications which should guide us, are to remove local irritation by counter-irritants, to promote the healthy action of the secernent organs, and to give a tone to the constitution by vegetable and metallic roborants. The author expressed his belief that there was no specific for epilepsy; the salts of zinc certainly fail to remove it in many cases.

In a postscript he detailed the results of an analysis of the Returns of the Registrar-general with reference to sex in deaths from epilepsy during seven years; which gave 6729 males, and 6149 females, or 52·26 of the one sex to 47·73 of the other.

ART. 35.—*On the use of Tartar Emetic in the treatment of Epilepsy.* By Dr. JOSEPH BELL, late Physician to the Glasgow Royal Infirmary.

(*Glasgow Med. Journal*, Oct., 1857.)

Dr. Bell is inclined to adopt the opinion that the proximate cause of epilepsy is congestion of some portion of the nervous centres, and that it is the vascular state that gives rise to the paroxysm, even in those cases in which the exciting cause may be structural alteration either of the nerve-substance, or of its coverings; and he recommends tartar emetic with a view to the prevention of this congestion. He considers that tartar emetic is proved to be a proper remedy in epilepsy by the following circumstances:

"1. The great value of tartar emetic in the delirium of fevers, as recently introduced into practice by the late Dr. Graves, of Dublin. No doubt he combined the antimony with opium, and inferred that the combination was more beneficial than the simple preparation. A very little consideration will lead to a different conclusion. In the first place, he records many cases in which he exhibited quarter-grain doses of the tartar emetic every two hours without any preparation of opium, and the effects were uniformly successful. Secondly, the large quantity of the antimony, and the few drops of laudanum which his prescriptions contained, can leave no doubt but the efficacy of the treatment was due to the former. For example, in some of his cases he ordered two grains of tartar emetic and forty drops of laudanum to eight ounces either of water or camphor mixture; of this he exhibited a tablespoonful for the dose. In others he ordered four grains of the antimony, one drachm of laudanum, and eight ounces of water, the dose being also a tablespoonful; so that each dose

contained from an eighth to one-fourth of a grain of tartrate of antimony, and only about four or five drops of laudanum. From these circumstances, I think we are justified in concluding, that whatever efficacy the mixture posseses, it must be ascribed to its antimonial constituent. I may be permitted to observe that, in the treatment of fever, I have, on the one hand, employed the antimony without the laudanum with great advantage, and on the other, have used the laudanum without any benefit.

"2. Tartar emetic has been most successfully employed in delirium tremens by Dr. Graves and others. It is consistent with my knowledge, that many medical men of this city place great reliance on its power in controlling this disease. In France we find Lepelletier most strongly recommending the drug as being capable of speedily curing the disease without the assistance of any other remedy.

"3. The power which it possesses in controlling acute inflammatory visceral congestions, is too well known to require any comment.

"4. The late Dr. Cheyne, of Dublin, has most satisfactorily established that antimonial preparations exercise a special influence in preventing cerebral congestions.

"5. From Aretæus to De Haen, and from the latter to the authors of the present day, we find it recorded that emetics and nauseating substances have proved very efficacious in the treatment of epilepsy. Indeed it is only on this principle that we can explain the use of roasted toads and other disgusting remedies, that were recommended by medical writers of the fifteenth and sixteenth centuries.

"6. In the fourth volume of the 'Transactions of the Association of the Fellows and Licentiates of the King's and Queen's Colleges of Physicians of Dublin,' Mr. Creighton, surgeon to the Foundling Hospital of that city, published a paper on the treatment of epilepsy by the external use of tartrate of antimony as an ointment. He selected the worst cases in the institution, and has reported six instances in which the disease was either most essentially mitigated or entirely removed. On carefully reading these cases, it appears to me that the constitutional effects of the remedy were always experienced by the patients—a circumstance that occasionally happens from the employment of tartar emetic as a counter-irritant.

"7. Mr. Ackerley. of Liverpool, has published in the twenty-first volume of the 'London Medical Gazette,' a most excellent paper in which he establishes the great benefit resulting from the use of the drug in spasmodic diseases, such as hysteria and epilepsy.

"Lastly, writers on the treatment of insanity are unanimous in their eulogiums on the power which antimonials possess, in subduing the maniacal paroxysm."

Dr. Bell then reports some cases occurring in the Glasgow Infirmary, in which the antimonial treatment was tried.

Case 1.—M. M—, æt. 31, admitted 11th of October, 1855; above ordinary stature, dark complexion, and full habit; states that ten years ago she had a severe attack of scarlet fever, since which time she has had epileptic fits. At first these attacks occurred about once every four months, generally during the night; but that lately they have been much more frequent, as often as every second day, taking place both during night and day. She is quite

unconscious during the fit, lacerates tongue, and froths at mouth. After paroxysms she remains stupid and drowsy; complains of constant headache and loss of memory; appetite good; bowels constipated; catamenia regular, but scanty.

Treatment and Progress.—She had a dose of castor oil on admission. The day after, she had a fit of an epileptic character.

On the 13th, she was ordered a quarter-grain of tartar emetic every fourth hour. On the 19th, no fit since commencement of medicine; she complained of severe headache, her face flushed. She was ordered to have eight ounces of blood removed from nape of neck by cupping. On the 5th of November she left the Infirmary, having had no return of fits, and her headache gone.

The patient was again admitted on the 18th of September, 1856. She stated that she had remained well for nearly six months after she was dismissed, but afterwards her fits returned, and have become very frequent during the last month—sometimes three attacks during the day and night. General health good.

She was again ordered the same dose of the drug, and to have eight ounces of blood abstracted by cupping from nape of neck. She had a very slight fit during the night of the 26th. A blister was ordered to nape of neck. Had no return of fits till the 9th of October, when she had two attacks; but the convulsive movements were not severe, and of short duration. The cupping was repeated, and in addition to the solution of tartar emetic, she was ordered to have two grains of the white oxide of zinc, two grains of camphor, and two of the acetous extract of colchicum, three times a day. This was prescribed from a well-grounded suspicion that the patient was guilty of immoral practices; in order to restrain indulgence in which, a copious eruption of pustules were produced by the tartar-emetic ointment. On the 10th she complained of great sickness and prostration. The antimony was suspended, and she was ordered ten grains of the saccharine carbonate of iron three times a day. The cupping repeated to four ounces. On the 16th, the antimony was resumed, and the other medicines omitted. A seton was ordered to be inserted at nape of neck. On the 25th, the antimony was suspended, there being no return of fits. As she complained of severe headache on the 25th and 28th, she was ordered one grain of tartar emetic, and a scruple of ipecacuanha for a dose. These operated freely, with relief to pain of head. On the 4th of November she was put on sulphate of zinc in grain doses, three times a day. On the 12th she had three fits, and on the 13th had a slight attack during the night.

Case 2.—A. H—, æt. 18, admitted 13th March, 1856; of ordinary stature, fair complexion, and full habit; she states that she has been subject to epileptic attacks for about eighteen months, occurring at intervals of about three weeks. She has no warning of their approach, gives a loud scream, and falls down convulsed, remaining perfectly unconscious; has foaming at the mouth, lacerates tongue, and feels drowsy for hours afterwards. Fits take place most frequently during the night, occasionally in the morning, and very rarely during the day. General health good. Catamenia regular, but scanty; ascribes the origin of illness to a fright.

Treatment and Progress.—On the 14th, she was ordered a tea-spoonful every eight hours, of a solution of tartar emetic (two grains to the ounce).

On the 18th, the strength was increased to four grains to the ounce, and, in consequence of headache being severe, she was ordered to have eight ounces of blood abstracted from nape of neck by cupping. On the 19th she complained of sickness and vomiting; these symptoms continuing on the 20th,

the mixture was suspended, and the cupping repeated. On the 21st an anæmic murmur was heard over base of heart. She was ordered ten grains of tartarized iron three times a day.

On the 28th this murmur had disappeared, and the patient felt quite well. She was ordered to resume the antimonial mixture (four grains to the ounce). Sickness returned, but at the end of two days it ceased. On the 2d of April the strength was increased to five grains to the ounce, and on the 10th it was increased to six grains. On the 11th, the medicine was suspended in consequence of sickness. She was ordered to apply six leeches to nape of neck, and to have at bedtime two grains of camphor, and three of the acetous extract of colchicum. At five o'clock in the morning of the 12th she had a fit which lasted seven minutes; she had got a fright during the night, by the sudden death of the patient who occupied the next bed. The antimony was resumed in doses of a quarter of a grain every four hours. No sickness was experienced. A blister was applied to nape of neck. On the 28th April, in consequence of return of headache, combined with loss of appetite and thirst, the antimony was suspended, and she was ordered half a grain of the valerianate of zinc three times a day. The headache continuing, on the 30th of April she was again cupped to six ounces, and the antimony resumed in doses of a sixth of a grain. On the 12th of May she had no return of fit, felt quite well, and refused to remain longer in the infirmary. She was, therefore, two months under treatment, and had only one slight attack. I may mention that this girl called on me during last June, and informed me that she had no return of the fit, but that lately her headaches had been very severe. I recommended her to resume the use of the tartar emetic in small doses, and to let me know the result. I have not heard of her since.

Case 3.—A. G—, æt. 14, admitted 28th of March, 1856; a stout well-made girl of sanguine temperament; during the last month has been subject to convulsive fits of an epileptic character. The first attack followed the use of a lotion for conjunctivitis, the application having caused excessive pain. She has generally two fits daily, leaving her drowsy and exhausted; tongue slightly lacerated. General health not impaired; bowels constipated. Has not menstruated.

Treatment and Progress.—She was ordered the one-eighth of a grain of tartar emetic every six hours. This produced nausea, but no vomiting. Two days afterwards she had the sixth part of a grain three times a day. Four days after admission she had a slight fit. The antimony was increased to a fourth of a grain. Conjunctivitis having returned, she had three leeches applied to angle of right eye; these were repeated two days afterwards. She remained quite free from fits till she left the infirmary on the 19th of April. She was recommended to discontinue the antimonials, and to use for some weeks one grain of sulphate of zinc, and two of quinine, three times a day. To return to the infirmary if any relapse should take place.

Case 4.—E. T—, æt. 11, admitted 28th of May, 1856; a tall girl, for her age, of a florid complexion; about five years ago got a severe fall on her head; after this she became subject to epileptic fits. At the commencement they occurred during the night, but latterly they also have taken place during the day; sometimes she has four fits during the twenty-four hours; states that they are preceded by an indescribable sensation; she is quite unconscious, lacerates her tongue, is severely convulsed; thumbs clenched in palms of hand; remains for some time stupid and sleepy; bowels constipated; no catamenia.

Treatment and Progress.—The day after admission she was ordered three

grains of the iodide of potassium three times a day. She had two fits. On the 30th of May she had also two fits, on the 31st one fit, and on June 1st two fits. On June 2d, she was cupped to four ounces from nape of neck: had two fits, On the 3d she had also two. She was now ordered one-eighth of a grain of the tartar emetic every four hours. This produced both nausea and vomiting; the cupping was repeated. On the 13th the antimony was interrupted, and she was ordered half a grain of valerianate of zinc, and one grain of extract of hyoscyamus, three times a day. She had no fit till the 28th; that is, three weeks after commencement of the tartar emetic, and ten days after its suspension. It was again resumed; she had no fit till the 2d of July, when she had a very slight attack. She remained in the Infirmary till the 27th without any return.

Dr. Bell says these cases were of the sthenic, and not of the asthenic type of epilepsy, but he says also, "I conceive that the remedy may possess as much power in controlling the epileptic paroxysms in the debilitated, as it has in the robust." He regards, moreover, the antimony "as a mere paroxysmal prophylactic—not as a cure;" and he admits that the patients were under treatment for too short a time to make their cases thoroughly satisfactory. This is the view which Dr. Bell has been led to take upon the subject of epilepsy, and this is the evidence upon which he takes his stand. And surely there are not many who would be prepared to take their stand with him, and look in the same direction.

Art. 36.—*A case of Catalepsy.* By Dr. G. Buchanan.

(*Glasgow Med. Journal*, July, 1857.)

This case presents no new facts in elucidation of pathology or treatment, but it affords a well-marked example of a very rare affection.

"On the 28th of May, 1856, I was suddenly called to visit Mr. X—. Proceeding immediately to the house, I found his mother, a widow lady, in great distress. She said, 'My son is very ill; look at him, there he is,' pointing to a bed-room door. Having had no information as to the nature of the case, I was struck with surprise at what met my view. Standing in the door-way of the room indicated was a young man about thirty years of age, stout and well-made. He had stripped himself of coat, waistcoat, neck-tie, and boots; and in that state he was planted with his feet slightly apart and holding the door-handle with one hand. Going up close to him, I asked what was the matter, but he paid no attention to what I said, nor answered a word. I now perceived that he was in a strange state. His eyes were wide open, staring straight forward, wholly devoid of expression, motionless, and with the pupils dilated. On taking hold of his arm, I found it was cold and hard as marble, and on asking him to move and trying to take his hand, I found the muscles firm as iron, and clenched tight as in cadaveric rigidity. I felt every part of his body, the muscles of his legs, abdomen, neck, and arms, all were equally fixed, tight, hard, and cold. His face was pale and cold, the lips livid, the jaws fixed; perspiration was visible in drops on his forehead. The pulse was 80, of fair strength, but was apparently soft; this, however, I presently found was fallacious, the apparent softness being caused by the tension of the tendons of the supinator longus and flexor carpi radialis muscles, which bore off the fingers from pressing on the artery. The breath-

ing was subdued, but regular, and was occasionally accompanied with slight stertor, being performed entirely through the nose.

"Being utterly astonished at such a strange appearance, I tried to disengage his hand, with the view of leading him to his bed, which was not far off. With the greatest exertion I succeeded in unclasping it from the door-handle, which I had no sooner done, than with the other he seized the door-post, and with the one now released, grasped my own. It closed on mine with the force of a vice, and the spasmodic clutch made me wince with pain, but by no effort could I release it. I remained writhing in the gripe of a marble statue, insensible alike to his own state and mine. At last, by the use of great force, I got clear, and stood aside a little to recover my breath. When I had arrived at the house, I learned that Mr. R. Connell, surgeon, had been sent for at the first, and had seen the patient; and while I was engaged in the personal struggle above detailed, Mr. Connell was sent for. On his arrival, we again examined the patient together, and leaving him standing in his statue condition, retired to consider the nature of the case. The prominent symptom was fixation of the muscles, and every medical man at that time having his attention turned to the trial of Palmer, it is not strange that the idea of strychnine poisoning should have suggested itself to both of us. We, therefore, a second time scrutinised all the symptoms, and as I was at that time engaged in assisting at some experiments on the effects of strychnine on inferior animals, we had little difficulty in coming to the conclusion that the idea first entertained was inadmissible. The attack was evidently of a cataleptic nature. Our first object was to get the patient into the recumbent posture, and for that purpose had a sofa prepared in another room, preferring it to a bed on account of the freer access of air. We now tried to lead the cataleptic into the other room, but he was planted so firmly that we could scarcely move him. Disengaging his hand from the door-post, we pulled him forward, when he fell over perfectly rigid like a pillar. We pulled him along in this state, but had to place him on his feet again for fear of hurting his toes, which were catching on the carpet. We then tried to carry him, but on getting him nearly level, the knees bent, and he slipped from our hands, again assuming the erect posture. After awhile the hands began to twitch a little, and on pulling him, we now got him forward a few steps, soon, however, becoming rigid again. By dint of pushing and pulling we got him conveyed to the sofa, on which we had little difficulty in laying him. Warmth was immediately applied to his feet and over the stomach, and cold to the head by means of wet towels. In a short time the hardness of the limbs wore off, his face became warm, he became relaxed in all his muscles, and could swallow a few spoonfuls of water. There seemed to be no indication for special treatment, and we left shortly after, with orders to continue application, and give a cup of tea when he appeared able to swallow it.

"Two hours after, in company with Mr. Connell, I again visited him. All symptoms of rigidity had passed off; he was lying perfectly easy on the sofa, breathing naturally, his face a little flushed, and perspiring. He spoke sensibly, and said he was pretty well, but felt tired and sore, evidently from the violence we were under the necessity of using to get him to move on our former visit. He assured us he had never had any fit of the kind before, and the only reason he could assign as cause for the present one was, that he had been very much fatigued that day in removing from another house, and had taken almost no food. When Mr. Connell saw him about an hour before my arrival, he found him standing in his bed-room in the half undressed state, with a strange, wild look, and the appearance of being tipsy. We found,

however, that he had taken no spirits that day, and was not in the habit of indulging. He could answer questions, but was very excitable and obstinate. He was induced to lie down, and had an opiate administered. He told us afterwards that, feeling uncomfortable in bed, he had risen to undress, when the attack came on and fixed him in the position in which I found him.

"On visiting him next morning, he seemed quite well. He had slept, and taken breakfast with relish. He was advised to remain at home that day, and take some purgative medicine. The day after he was well, and at his usual avocations.

"On the 22d April, 1857, I was again summoned in haste to see Mr. X—. On entering the house, I found him in nearly exactly the same state as on the former occasion. Mr. Connell had again been called in in the emergency, and I found that gentleman supporting the patient, who was standing, stripped of coat and boots, and with one hand clutching at the gas bracket, and by the weight of his body had partially twisted it from its place. The symptoms were precisely those of the former attack, and a description of one will serve for both. What rivetted our attention most on both occasions was the fixed and unchanging attitude, the perfect hardness of the muscles, the pallor of the countenance, the glaring and wild expression of the eyes, and the icy coldness of the skin. Altogether, it would be difficult to conceive a more appalling spectacle. Having seen him during the previous attack, Mr. Connell and I at once knew how to proceed, and using force more promptly than before, we soon had him prostrate on the sofa, although not without considerable exertion. We had most difficulty in getting him into the horizontal posture, for by the time we had dragged him to the sofa, the rigidity had partly gone off, and he was partially conscious. He, however, struggled violently against us, not in the way of attack, but of resisting all our efforts to make him lie down. Mr. Connell, therefore, grappled with him, while I seized his feet, and by a rapid jerk both were precipitated. A little exertion freed Mr. Connell from his grasp, and he then lay quiet and stiff. The same means as used on the former occasion—warmth to the feet and stomach, and cold to the head—were soon followed by entire relaxation, and when we returned in two hours we found him sensible and able to swallow a cup of tea, but strangely excitable and ill at ease. Next morning all evidence of the seizure had passed off.

"In the present instance, searching for some cause of the fit, I learned that the patient is subject to slight bilious attacks, that at this time his digestive organs were somewhat out of order, and that, meeting an old friend, he had accompanied him to the theatre, where he remained till a late hour; that during the day he had been in a restless state, and being unable to take a proper quantity of food, was much worn out in the evening, just before he was seized. The circumstances were not very dissimilar from those in which he was attacked on the previous occasion, the exciting cause in both being excitement, fatigue, and want of food. On questioning him as to his feelings during the attack, he said that he saw us, and although he did not remember all that passed, he knew quite well that we wished him to lie down, but that he had no control over his limbs, and had no power to assist, and was unconscious of resisting our efforts. As to his state during the day, he felt tired and excitable, and being quite worn out when he came home, he had resolved to go to bed for a rest, and was in the act of undressing, when he suddenly lost the power of his limbs, and would have fallen, he thinks, if he had not caught hold of the gas pipe, and in that position he stiffened, and was unable to move from it.

"I have had opportunities of seeing this gentleman in his ordinary state of

health during the interval of the attacks, and since the last one. He is of a nervous and excitable temperament, and has quite the appearance that one would expect in the subject of some nervous affection.

"Mr. Connell informs me that he has been called to see him on two other occasions, viz., the 3d July, 1856, and the 10th May, 1857. On both of these dates he found him in a very restless and troublesome state, very stubborn, and partially insensible, but with no spasmodic or cataleptic seizure. They both occurred after a day of unusual fatigue. This state passed off without any treatment except rest, quiet, and an opiate.

Art. 37.—*Facial Paralysis followed by Pleuropneumonia.* By Dr. Goodwin, Physician to the Norfolk and Norwich Hospital.

(*Medical Times and Gazette*, Oct. 17, 1857.)

This case appears to be another illustration of that connection between chronic disease of the ear and pneumonia or pleurisy, to which attention was directed some time ago by Dr. Gull and others (*v.* Abstract, XXI, p. 258). It is also interesting as an instance of recovery from very severe disease.

Case.—"Francis Bunn, æt. 29, a light porter, was admitted under my care into the Norfolk and Norwich Hospital on the 1st of November, 1856. His condition on my first seeing him was most deplorable—pale, emaciated, and perfectly unable to walk; he was carried into the ward. It appeared from those who came with him, that in the previous May he had been exposed to cold and wet, and had an attack of inflammation of the internal ear on the right side, which terminated in an abscess bursting into the throat—deafness and perfect paralysis of the muscles of the right side of the face ensuing. On admission there was perfect deafness in, and a fetid purulent discharge from, the right ear; the integument over the mastoid portion being tender and easily indented by the fingers.

"He complained of a good deal of pain just at the articulation of the jaw, and over the right eye, and the whole right portion of the scalp. This pain was of a most agonising character, and he would scream most terribly at times. There was some loss of sensation on the right side, and all the muscles of the face were paralysed—there was also hanging of the cheek, and a good deal of difficulty in moving the jaw in a lateral direction.

"The treatment pursued was to support his strength by stimulants and beef-tea enemata, and quinine in very large doses, that is eight grains every four hours at first; this acted like a charm upon his severe pain. The ear was syringed, and slight counter-irritation was employed. Under this plan he recovered his strength pretty fairly, and his power of swallowing and mastication; and on January 20, 1857, he was made an out-patient, with the facial paralysis much the same; the deafness was improved, and the discharge from the ear still abundant and dependent upon disease of the temporal bone; the membrana tympani was destroyed.

"On February 14th I again saw him, having been absent from home for a short time, and I found him complaining of pain in the left side on taking a deep breath, and general ill-health.

I made him become an in-patient, and found on examination that he was suffering from pleuropneumonia of the left lung. He was treated cautiously with antiphlogistic remedies and blisters—but his condition seemed not to indicate either antimony or mercury. He gradually got better, and then con-

tinued for a long time in the same condition, but not getting either much better or much worse; he had very little appetite, and any meat served to cause nausea—his urine was very dark coloured and loaded with lithates, and his pulse continued most provokingly high. I examined his chest from time to time, and there was slight impairment of percussion sound, at the lower part of the lung, both anteriorly and posteriorly, and some rather large crepitation at different parts.

"On the 26th February he was seized with severe dyspnœa, and he struggled for his breath like a man with spasmodic asthma, becoming black in the face. When I saw him he was very much exhausted, but the dyspnœa had gone off in a measure. There was general dulness over the whole of left lung, and very little respiratory murmur could be heard, and no vocal fremitus; expectoration was scanty, and frothy white coloured. He had some senega and ammonia and ether, and a large blister at the back of his chest.

"Another severe attack of dyspnœa followed very soon, and he was ordered some Mist. moschi, which relieved him immediately, and he had some to take whenever he felt the attacks coming on. He now began to expectorate much more freely, and the sputa was clearly purulent and very offensive. He continued in this condition until the 4th of March, taking plenty of brandy, eggs, and wine, and his musk about twice daily. On March 5th, I find by my notes that he was better, but complained of a heavy feeling, and occasional sharp pain under the left nipple. I found a portion of integument, about as large as the hand, immediately below the left nipple, which had a faint blush, and the temperature greater than the other parts of the chest. Percussion gave a dull sound over it, and but little respiration could be heard; but he does not take deep inspirations at all, and most of the work is done by the right lung. There is some tubular breathing just over the nipple, and posteriorly respiration has become bronchial at the upper and middle part; at the base small crepitation.

"A poultice was applied, which gave ease, and the next day there was evident bulging of the ribs, and the intercostal spaces anteriorly were quite obliterated below the nipple. The blush has become more manifest and less extensive, and at one point matter seems very close to the surface, and the integument rises and falls synchronously with the heart's beat. He continues to expectorate a very large quantity of horribly fetid pus, gangrenous in fact. I considered that I had to deal with either a circumscribed abscess of lung, or an encysted empyema; but I thought the former more probable, and that gangrene was taking place. I determined to allow the collection to open where it was endeavouring to do so, just between the fourth and fifth ribs, and this occurred on March 8th, and about three pints of very fetid, dirty-coloured pus were discharged, the opening being about as big as a pea, and at every inspiration air was drawn in and returned with a whizzing noise in expiration, and the fetor of the breath rendered the ward almost unbearable. He continued for a long time in a most critical condition, and was reduced to very extreme debility, though he had brandy, wine, eggs, &c., *ad libitum* and bark and ammonia. He ceased to expectorate as soon as the matter burst out, and there was another large discharge, about one and a half pints from another aperture, close to the first, four days afterwards. From this time, until his discharge on June 20th, he slowly improved. The physical signs were of a large cavity in the central portion of the lung. The wound in the side discharged most copiously for many weeks, and most fetid was the pus; whenever he coughed he could empty the cavity of its contents. There was a portion of necrosed rib to be seen, and a portion of integument about an inch square sloughed away. During the last three weeks of his stay in

the hospital, several small scales of dead bone came away, and on his being made an out-patient the wound had completely granulated. I found the physical signs the other day (June 27), as follows:—Percussion sound, impaired over the lower anterior portion of lung, not resonant under the clavicle. Respiration quite clear anteriorly over whole lung, except just round the wound, where there is some small crepitation. Posteriorly, percussion sound impaired, and though a good deal of air enters the lung, it does so imperfectly; but no evidence of any cavity appears now. The wound is perfectly healed, and the patient walked up to my house to-day."

Art. 38.—*Alarming Head Symptoms relieved by Quinine.* By Mr. R. L. Bowles, of Folkestone.

(*British Med. Journal*, Aug. 22, 1857.)

Case.—H. W. B——, a medical man, stout, strong, and healthy, æt. 28, and married, was attacked on the evening of July 6th, on his way home from the cricket-field, with most severe headache. He had walked, in the course of the day, about sixteen miles, besides having played for two hours at cricket. The day was hot and sultry. On arriving at home, he went to bed, but the severity of the pain in his head prevented his sleeping. He had also great intolerance of light. During the next two days he continued much in the same state, with the addition of occasional delirium. It was at this time that I was called in, and found my patient complaining of severe splitting pain in the forehead, which was much increased by talking or moving. He earnestly requested me to leech or bleed him, having a conviction that he was suffering from congestion of the brain. The pulse was from 46 to 48 in a minute, soft, and occasionally intermitting; the skin cool and moist; the tongue œdematous and pale, with a soft white fur on its surface; the face, which was occasionally flushed (though without a corresponding heat of skin), wore a singularly indifferent and solemn expression; the ocular conjunctiva was healthy in appearance. He had become restless and irritable, and was constantly throwing himself about in bed. His bowels had been acted upon by a seidlitz draught. A mixture of ammonia, sulphuric ether, and camphor julep, was now prescribed to be taken every four hours, and a full dose of liquor opii at bedtime.

July 9th, 8 a.m. The patient had passed a comfortable night, and appeared much relieved, his countenance wearing a more natural expression. In the afternoon, however, the symptoms returned in all their severity. The opiate was omitted at bedtime. A blister was applied to the neck.

July 10th. In the morning, I found that he had been delirious, and had passed a restless night; the pain and intolerance of light were quite as distressing; and he was unwilling to take nourishment of any kind. The bowels were confined, and the tongue had now a brownish coat on the back part. The blister had risen well. A physician, a friend of my patient, called to see him; and, believing the case to be of the nature of sun-stroke, advised eight leeches to the temples, which were accordingly applied, but with no relief to the symptoms. He was now a good deal depressed.

July 11th. He passed a restless night. The bowels were freely relieved by a pill of calomel and colocynth, but each action of the bowels appeared rather to aggravate the headache. The opiate was given at bedtime, and a mixture of sulphuric ether, valerian, and camphor; with beef-tea *ad libitum*. This treatment afforded considerable relief, and gave him a comfortable night.

July 13th. Severe symptoms again returned, which were partially relieved by repeated doses of the stimulating mixture. Mr. Roscow (who now saw the case with me) advised disulphate of quinine, in three-grain doses, to be taken at intervals of two or three hours; care being taken to give the first dose of quinine when the headache was at its minimum. The effect was magical. The first dose prevented the paroxysmal return of headache, and, with its continuance, a rapid general improvement took place.

July 16th. My patient was convalescent, the pulse having risen to its normal standard.

Twelve months ago my patient was living in the island of Grenada, and for nearly two years he suffered severely from repeated attacks of intermittent fever, for which he had taken large doses of quinine with great advantage.

Art. 39.—*On the use of Chloroform in certain forms of Paralysis.* By M. Landry.

(*Mon. des Hôp.*, 55, 1857; and *Med. Times and Gazette*, Oct. 10, 1857.)

M. Landry terminates a long series of papers with the following conclusions:—1. There exists a group of paralyses of the motor powers, offering the following general characters. There is preservation of muscular irritability and of the excitability of the nervous trunks, integrity of muscular nutrition, and absence of reflex motion, of spontaneous convulsive movements, of contractions, of fibrillary contractions, and of trembling in parts actually deprived of voluntary motion. 2. In this group may especially be ranged hysterical paralysis and sympathetic paralysis, generally confounded together under the common denomination hysterical. 3. Some of these paralyses disappear during sleep, and immediately yield to the action of chloroform (probably also of ether) and narcotics. Others undergo no modification under such influences. 4. The former appear to belong to the category of sympathetic paralyses; the latter to that of hysterical paralysis, properly so called. 5. These phenomena constitute a means of diagnosis of true hysterical paralysis. 6. They serve to distinguish in all cases the paralyses in which they are observed from those which are dependent upon organic, nervous, or muscular lesion. 7. Narcotic and anæsthetic agents may be employed in the treatment of paralysis, whether as curative agents, palliatives, or simple auxiliaries.

(B) CONCERNING THE RESPIRATORY SYSTEM.

Art. 40.—*On Redness of the Cheeks as a sign of Pulmonary Inflammation.* By M. Gubler.

(*Bull. de la Soc. Méd. des Hôp.*, No. 6; and *Gaz. Hebdom. de Méd. et Chir.*, Aug. 7, 1857.)

The investigations of M. Gubler tend to revive an ancient opinion, viz., that redness of the cheeks is a sign of inflammation in the lungs. This was the opinion which was universally accepted before the days of the stethoscope, when to have redness of the cheeks and pain in

the side was to have inflammation in the lungs. M. Gubler reports nine cases, in all of which the cheeks exhibited a manifestly increased redness and heat in the side corresponding to the pulmonary inflammation, or in both sides, if both lungs were affected. Whatever the kind of inflammation, whether of the bronchial tubes or of the substance of the lungs, whether primary or that accompanying tuberculous degeneration, the cheeks were always found to present this increased redness and heat; and not only so, but the increased redness and heat was found to vary with the changes of the inflammatory condition, diminishing or augmenting as this condition diminished or augmented, and being, as a rule, invariably proportionate to the intensity of the inflammation. These investigations appear to have been made in all cases with very great care. M. Gubler explains the phenomena, to which he directs attention, by supposing that the branches of the sympathetic nerves distributed to the face are made to partake, by a kind of reflex action, in the irritation caused by the pulmonary inflammation in the nerves belonging to the same system which are distributed to the lungs.

ART. 41.—*On Curable Gangrene of the Lung.* By Dr. CH. LESEGNE.

(*Archiv. Gén. de Méd.*, July, 1857.)

"I am tempted to believe," says M. Laennec, in his 'Treatise on Auscultation,' "after an experience in many cases which have recovered, that the odour and character of the expectoration proceeding from a gangrenous excavation of the lung, does not always indicate the existence of such excavation, and I incline to think that the same kind of expectoration may sometimes depend upon a general disposition to gangrene, which is manifested solely in the mucous secretion of the bronchi." And certainly it is not always possible to refer this character of the expectoration to small gangrenous eschars in the substance of the lung, for in two or three instances, Laennec says further, "I was altogether unable to find anything after death which would account for the gangrenous odour beyond a certain proneness to putrefaction, particularly in the mucous lining of the bronchial tubes."

It is to this pathological condition that Dr. Lasègne directs our attention, first by an imaginary sketch of his own, and afterwards by a case related by Dr. Molley, and reported in the 'Lancet' of May, 1854.

The sketch is this. An individual of variable age, of a constitution more or less robust, tried generally by previous fatigue or illness, is seized with bronchitis. At first this bronchitis has no peculiar symptoms, the oppression is moderate, the cough moderate, the expectoration sufficiently copious, and such as is met with in an advanced period of catarrhal affection; but notwithstanding this want of severity in the symptoms the general health declines, the expectoration becomes purulent and more copious, and some of it has a fetor which attracts the attention of all who come near the patient.

Presently the fetor of the expectoration becomes more tolerable or passes off altogether, but the bronchitic symptoms continue.

Then, after an interval of variable duration, the bronchitic symptoms become exacerbated, the expectoration becomes of a yellowish-green, sometimes brown, sometimes gray; the quantity becomes increased, often to an excessive amount; and it again acquires the fetid and gangrenous odour. This expectoration, perhaps, is not uniformly present, but it happens in fits at different periods of the day or night. The breath is more or less offensive. The strength fails; the appetite fails; fever is slight or altogether absent; digestion is but little troubled; coarse or sub-crepitant moist râles are heard over different parts of the chest or over its entire extent; the voice may or may not have a bronchial resonance, but there is no increased dulness on percussion; the cough has no characteristic peculiarity. Sometimes the bouts of copious expectoration are preceded by transient feelings of rigor. This state of things may continue for months, almost for years, to the great impairment of the general health, but this impairment does not reach the degree which is witnessed in the hectic state of advanced phthisis. Hæmoptysis may or may not be present.

If the course of the malady is prolonged, there may be several intermissions in which the expectoration diminishes and loses its fetid character, and in which, also, the stethoscopic signs may become greatly altered for the better.

The example which M. Lasègne records is a case of Dr. Molley, taken, as we have said, from the 'Lancet' of May, 1854.

Case.—D. C—, æt. 49, a bookbinder.

August 27th, 1851.—For some days past complains of malaise, with a peculiar sense of feebleness in the left side. The face is pale and yellowish; no cough. Up to two years ago very intemperate; but very abstemious since this time.

31st.—No improvement. An obscure plural rubbing sound over the anterior surface of the middle third of the left lung; inspiration jerky; no pain on taking a deep breath.

September 4th.—No manifest improvement. Respiration not much interfered with, however, and the patient is able to walk a considerable distance without notable fatigue.

6th.—Sensation of feebleness rather than of pain in the chest; slight cough; some expectoration, characters not mentioned.

8th.—The only new symptom is that the expectoration has acquired a blackish colour, and is semi-purulent and very fœtid. Pulse 102, not depressed.

10th.—Expectoration increased six-fold, purulent, and having the characteristic gangrenous odour. While talking to the patient, a sudden gust of disagreeable vapour escaped from his lungs, and filled the room, and at the same time he began to cough and spit, saying that his attack was coming on, that it would last for fifteen minutes, that several such attacks came on in the day, and also, that during them he had a filthy fishy taste in his mouth.

12th.—Expectoration more copious; cough more troublesome. Still no thoracic pain. Gurgling sound heard at some distance during speaking.

Pulse 102. Sleep sufficiently good. Appetite not defective. Slight "bruit de craquement" over the chest, both anteriorly and posteriorly.

15th.—Expectoration somewhat diminished, and changed in its characters. It is still as fetid as ever, but now in a blackish fluid are seen to float certain globular bodies, puriform, white, yellow, greyish, intimately mixed with blood, and easily removeable.

19th.—Diminution of cough and expectoration, and the odour much more tolerable.

20th.—Relapse. Cough and expectoration increased. Pain over the left side and extending to the right. The symptoms, indeed, are those of acute bronchitis, modified by the influenza now prevalent. Pulse 100, full. Fine râles, especially on expiration.

21st.—Marked improvement. Expectorated ordinary bronchial mucus and a little pultaceous matter.

Up to the 14th of October the patient went on improving, and the bronchitic symptoms had subsided by degrees. On examination towards the end of this period, the air was found to enter more freely into the part of the left lung in which the respiration has been described as defective, but there was also a cavernous sound indicating a small cavity between the inferior angle of the scapula and the angle of the corresponding rib.

October 15th. The bronchitic symptoms have relapsed, with copious and fetid expectoration, and pain.

19th.—These symptoms have subsided, and the expectoration has acquired the character belonging to ordinary bronchitis.

November 21st.—Considerable hæmoptysis.

December 2d.—Removed to another neighbourhood, and from this time the patient improved rapidly.

Dr. Lasègne also refers to certain cases reported by Professor Skoda, of pulmonary gangrene cured by inhalations of turpentine, as in all probability belonging to the category of the cases under consideration; and he also cites, as a probable case of the same kind, a case recently reported by Professor Laycock, of Edinburgh, which case forms the subject of our following article.

In conclusion, then, there appears to a gangrenous affection of the lungs (an affection to which attention was called some years ago by M. Brequet), which is confined either to the lining membrane of the bronchi, or to the secretions contained within the bronchi, which agrees in some respects with ordinary gangrene of the lungs, but which differs in its chronic course and curability, and in the copiousness of the expectoration, and of which the stethoscopic signs are never other than very unsatisfactory.

ART. 42.—*On Fetid Bronchitis.* By Professor LAYCOCK, of Edinburgh.

(*Medical Times and Gazette*, May 16, 1857.)

The remarks of Dr. Laycock upon this affection, which were delivered in a clinical lecture, acquire additional interest when read in connection with the remarks of Dr. Lasègne upon curable gangrene of the lungs (*v.* preceding article). "In one point only," says Professor Laycock, "is there a resemblance to pulmonary gangrene, namely, in the stench of the breath and of the sputa. In the fetid bronchitis,

however, the odour is not that of putrid flesh, but of butyric acid and the new odorous compounds, the butyrates of ethyl, now used to flavour confectionary. In the case of Scott the odour was that of May-flower, or apple-blossom, with a conjoint odour—a sort of *arrière gout* of fæces." Dr. Laycock relates three cases, one of which we give; another with aortic insufficiency and dilatation, pulmonary condensation and softening, and atrophy and softening of the left lobe of the cerebellum; and a third, reported in the 'Medical Gazette' for December, 1837, with bronchorrhœa and convulsive cough, occurring in tertian paroxysms. Dr. Laycock considers that functional disturbance of the nerve-centres in relation with the lungs is concerned in producing the butyric or fetid expectoration.

The interest of the case subjoined is enhanced by the fact that the odour of the sputa was found to be due to the presence of urethylamine, with butyric and acetic acids.

Case.—Oliver S—, æt. 37, single, by trade a tailor, residing in the Canongate, admitted February 17th, 1857.

Patient is five feet six inches in height, well formed and tolerably robust. Has the appearance of having been very stout, but the muscular system is now flabby. Diathesis, lymphatic; hair dark; features broad and massive; forehead prominent; conjunctivæ anæmic; eyes gray; nose short and thick, alæ nasi expanded; malar bones not prominent; upper lip tumid; mucous membrane of lips and gums pale; teeth small and regular, enamel good. Voice hoarse and whispering; breath gives off a peculiarly fetid odour. Sternal end of left clavicle is higher than the right; manubrium sterni depressed. On left side there is a prominence of the third and fourth ribs at their junction with the cartilages. Abdomen rather large and flabby.

History.—Is one of a large family, seven of whom, viz., four brothers and three sisters, are dead. Does not know of what diseases they died. Patient states that in his youth he was very healthy and temperate. Until the age of twenty-five years he followed the occupations of a tailor and a hawker, which he relinquished at this time for that of a beer-shop keeper. For five years subsequently he continued well, and though indulging occasionally in liquor, was not, he considers, on the whole, intemperate. Being unfortunate in this line of business, he was compelled to sell his house and resume his prior occupation of hawking. Owing to the depression resulting from his misfortunes, he became very intemperate, and five years ago had a severe attack of delirium tremens, for the treatment of which he became an inmate of the infirmary. After remaining there a month, he was discharged, and he returned at once to his habits of dissipation. Twice subsequently, while in a state of intoxication, he received injuries on the chest, which caused the alterations in its form above noticed. In other respects he continued well until a year ago, when he had a second attack of delirium tremens, and was again an inmate of the infirmary for eight days.

The present illness commenced three months ago, after exposure to severe cold and wet. The first symptom noticed was a troublesome cough, which, however, was unattended by pain or expectoration. This continued until two months ago, when, after repeated exposures to cold and wet, it became more urgent, though still without pain, and with only slight expectoration. Between three weeks and a month ago, the cough increased in violence; there was severe pain in the left side, and the sputa was streaked with blood. He noticed now, for the first time, that his breath was very offensive. Since

that time the cough has continued unabated; the pain in his side is much increased, and the sputa have been occasionally tinged with blood.

He has not been under medical treatment. He had no feverishness or thirst from the commencement of the present attack, until four days ago. States that he has lived well during the past seven years. Feels tolerably well, except as to the cough.

Examination on admission.

Respiratory system.—Thoracic expansion is somewhat restricted. The sternal end of the left clavicle is dislocated; manubrium sterni depressed, and the prominence of third and fourth ribs appears to have resulted from an old fracture.

On percussion, anteriorly, the right side of the chest is resonant, as also the upper two thirds of the left side; the lower third is dull both anteriorly and laterally. On auscultation over right side, inspiration is found to be harsh, expiration prolonged. On the left side, inspiration is sibilant, expiration prolonged and attended by fine moist crepitation superiorly, but over lower third, by loud snoring. Posteriorly, percussion is normal. The respiratory sounds are slightly exaggerated on both sides, and at the base of left lung there is fine crepitus with expiration. The cough is very troublesome; sputa copious (about a pint in twenty-four hours), muco-purulent, viscid and fetid, but much less so than the breath; some of the masses are tinged with blood. No lung-substance is observable under the microscope; but there are abundant pus-globules.

Digestive system.—Tongue furred and moist. Patient complains of great thirst. There is no hepatic or splenic enlargement discoverable on percussion. Bowels open.

Genito-urinary system.—Urine, sp. gr. 1·032; deposits a copious sediment of urate of ammonia and purpurates. Chlorides abundant.

Circulatory system.—Cardiac dulness two and a half inches transversely at nipple; impulse felt between the fifth and sixth ribs. There is a slight blowing murmur at the close of systolic, heard at the apex. Pulse 68, full and firm.

All the other systems normal.

February 17th.—Pulse 80, full; skin hot and dry. On right side of the chest the respiratory murmurs are harsh, and with forced expiration, snoring. On the left side the respiratory sounds have the same character, but to a greater degree. Posteriorly, forced respiration is harsh on right side; and on left there is snoring with both respiratory acts. Tongue furred; thirst excessive.

18th.—To take the following mixture:

℞ Naphthæ Medicinalis, ʒij;
Liquoris Morphiæ Muriatis, ʒiij;
Aquæ Destillatæ ad ℥vj.
M. Ft. mistura cujus sumat, ℥ss, ter quotidie.

Vespere.—On the right side the sounds are unchanged; but on the left there is sibilus anteriorly, with inspiration and expiration, and fine crepitus at the close of the latter. Patient continues very thirsty. Pulse 80, full. Patient expectorates about a pint in twenty-four hours. Makes no complaint.

19th.—No sibilus on left side.

20th.—Considerable pain over lower third of left side. To have a blister applied to the seat of pain.

21st.—Pain much diminished. Patient is still very thirsty. Sputa increased in quantity.

22d.—The pain has quite gone. On percussion the dull sound is more marked over lower third of left side. Over the same region, posteriorly, the crepitant râle is still heard.

23d.—The crepitus previously heard over left side anteriorly, is no longer present. There is no sibilus on either side, and over the whole front the respiration is not snoring, although it is harsh. Pulse 60, soft and rather feeble. Sputa much increased (two pints in twenty-four hours). Exhales an odour resembling that of May-flowers. Breath still very fetid; the odour is rather feculent than gangrenous.

25th.—Had a return of hæmoptysis to-day at 2 p.m. The sputa were deeply covered with blood. Patient had no pain, and at 7 p.m. the hæmorrhage ceased. Expresses himself as feeling well in other respects. The snoring and crepitus have returned on the left side. Posteriorly, over lower half of left side, there is coarse crepitus with both respiratory acts. Pulse 60, very feeble. Appetite good; thirst diminished. Add five minims of Tinct. Ferri Sesquichlor., to each dose of the mixture.

March 2d.—On auscultation a fine moist crepitation is heard, with inspiration over the whole back. There is no dulness on percussion, although the tone is rather flatter than natural. Vocal resonance everywhere increased.

5th.—For the last three days patient has been sitting up for about three hours daily. Sputa as copious as before. Still no complaints. Ordered to omit the other remedies and take one thirtieth of a grain of strychnia every eight hours.

9th.—No crepitus on right side. The breath is not nearly so offensive. Patient feels considerably stronger, and sits up for five or six hours daily. Increase dose of strychnia to one twentieth of a grain.

March 10th.—The sputa this morning were slightly tinged with blood. The cough was very urgent, but patient had no pain. Continued same treatment.

19th.—Strength increasing. Sputa diminished in quantity, and since last report have been occasionally tinged with blood. The fragrant odour has entirely disappeared, and the breath has almost lost its fetor.

24th.—The dulness over the lower third of left chest is still present; there are yet crepitations remaining over the corresponding region posteriorly. The expectoration has very much decreased; the sputa amounting to only half a pint in the day, contain but very few traces of blood.

27th.—The cough is now very slight; sputa measure only two ounces per diem. Patient is gaining flesh rapidly.

April 2d.—The improvement continues; sputa only one ounce in last twenty-four hours, viscid and free from blood.

Dismissed. The expectoration had wholly ceased.

The fetid sputa were examined in the chemical laboratory of the University, by the kindness and under the superintendence of Professor Gregory, and the odour was found to be due to the presence of methylamine with butyric and acetic acids.

Art. 43.—*On acute Atrophy of the Lungs.*
By Prof. Buhl, of Munich.

(*Virchow's Archiv*, xi, p. 275; and *Dublin Quart. Journ. of Med.*, Aug, 1857.)

"I very recently had occasion to examine the bodies of three individuals dead of typhus fever, the condition of the lungs in whom appears to me to be of special interest. It, in fact, confirms in a cer-

tain respect, and enlarges the opinion I previously expressed,* which was based on only a few observations, that a morbid process analogous to acute Bright's degeneration of the kidneys occurs in the lungs; that this, as an inflammatory process, must be distinguished from croupy and tubercular pneumonia; and that this desquamative pneumonia, as I proposed to call it, during acute exanthematous disease, typhus, &c., occurs in the period of specific morbification. In this paper I pointed out that solution and fatty metamorphosis, with more or less condensation and colouring of the pulmonary tissue, might be regarded as perfect or imperfect reparative processes of the acute inflammatory condition of the lung.

"The three dissections above alluded to afforded examples of a third and unfavorable termination.

"In all three cases death occurred between the fourth and the sixth week from the commencement of the disease, and therefore in the period of secondary processes after the disappearance of the proper typhus; dissection in each case revealed considerable hypertrophy of the brain, and in addition, in two instances, swelling of the spleen and of the mesenteric glands in a state of retrogression, the ileum with flat edged, more or less united, ulcers extending to the muscular coat; once, on the contrary, there was a relapsing, pale, medullary swelling of the edges of the ulcers already existing in the clusters of Peyer's glands, with fresh exfoliation of the same, fresh tumefaction of the spleen and mesenteric gland; in this case there was also a laryngeal ulcer denuding the arytenoid cartilage.

"The pulmonary pleura was never directly adherent to the costal; on the other hand, I twice found a circumscribed adhesion by means of fibrinous exudation; the parts of the pulmonary tissue subjacent to the latter exhibited at one time pulpy foci, of gangrenous odour, from the size of a pea to that of a hazel-nut, once in the inferior lobe of the right lung, once in the upper lobe of the right, and in the lower lobe of the left lung; at another time the greater part of one lobe was gangrenous, as was in one example the superior lobe of the left lung; in the latter case several of the corresponding branches of the pulmonary artery presented secondary thrombi, not caused by embolition. Besides these destroyed portions, the tissue of the affected lobe of the lung presented complete absence of air, an unusual flaccidity, with considerable infiltration, a smooth surface of section, a generally brownish-red discoloration mixed with something of gray, which latter was in some lobular portions predominant; a lobular more or less dense consistence, and, what was in each case most striking and significant, a considerable cylindrical dilatation and reciprocal approximation of the finer bronchi unprovided with cartilages, with a dark livid redness of their mucous membrane.

"Lobular condensations void of air, from the size of a pea to that of a cherry, were found in greater or less number also in the other lobes of the lungs, in the midst of aërated and merely œdematous tissue.

* Report on 280 dissections. Henle and Pfeufer's 'Journal für rat. Med. Neue Folge,' Bd. viii, Heft 1, p. 80, &c.

"In the two cases of pleural fibrinous exudation, there lay in most of the finer, but, as has been remarked, dilated bronchi belonging to the gangrenous foci of the pulmonary parenchyma, croupy plugs, which once were continued into the larger branches as loose investing croupy membranes. The gangrenous foci lay chiefly along the plugged bronchi, and in parts embraced the entire tube.

"Microscopic examination showed, when the tissue of the lungs was investigated step by step from the lobular, unaërated, condensed parts into the pulpy masses, that the chief alteration lay in the epithelium, as in it the simple dark filling with fine granules could be traced up to complete molecular destruction, whereby lastly the fine granules were either still accumulated in the form and arrangement of the earlier cells, and the little clusters continued grouped together, or with total obliteration of the contours of the cells only undefined molecular masses were to be seen. Fungi or infusoria were not observed in these masses. Of fibrinous plugs, pus in the pulmonary tissue, as well as of cellular formations, like those seen in the gelatinous infiltration around the yellow dry lobules in tuberculous pneumonia, no trace could be discovered. It is therefore evident that we had to do neither with tubercular nor with croupy pneumonia.

"In estimating the foregoing observations, two points appear to be pre-eminently of essential and characteristic importance: 1. The cylindrical dilatation and reciprocal approximation of the finer bronchi in the flaggy, unaërated, infiltrated pulmonary parenchyma; 2. The more or less complete molecular destruction of the epithelial investment of the air-vesicles.

"Both points present the most incontestable analogy to Rokitansky's fully formed acute atrophy of the liver. If in typhus, as I endeavoured to show in the report above quoted, only the early stages of acute atrophy are usually found, the same is likewise the case with the lungs; while the slighter degrees of the pulmonary affection just described, that is, of desquamative pneumonia, are not so rare in typhus, its highest degree, the acute atrophy of the lungs, as I think I must call the affection in question, is of extreme rarity.

"There can be no doubt we have really to deal with atrophy of the pulmonary parenchyma; the destruction of the pulmonary epithelium is unmistakable; the areolar tissue is filled with it and its molecular remains, as well as with some albuminous fluid; through expulsion of the air it is collapsed, atelektatic, and even if in no case an old pleural adhesion was present, still the force of the physiological adhesion of the costal and pulmonary pleura is so great, that under the above described decrease of volume of the pulmonary parenchyma and its simultaneous inaccessibility to air, it is able to overpower the walls of the bronchial ramifications, and to dilate their caliber. The cylindrical dilatation of the bronchi is explicable in no other mode.

"The only possible difference between acute atrophy of the lung and acute atrophy of the liver consists in this, that in the former, in consequence of the action of the atmospheric air, the destroyed masses, with their fibrous superstructure, will be subject to complete

softening and putrefactive decomposition, and therefore the pulpy, gangrenous foci will be chiefly situated around and along the bronchi, and the croupy affection of the bronchial mucous membrane and the pleuritis are to be regarded as further consequences of the same.

"Acute atrophy of the lung, combined with pulpy destruction, may further represent a form of pulmonary gangrene, which, at least on the dissecting-table, must be distinguished from other forms of mortification of the lungs.

"The coincidence of a relapsing tumour in the spleen, Peyer's and the mesenteric glands, with complete acute pulmonary atrophy, which latter represents a period of about four weeks, is also not without interest.

"As I have already done in my report above quoted, I forbear for the present to identify the desquamative pneumonia and its higher degrees, acute pulmonary atrophy and its consequent gangrene, with morbid conditions of texture, possessing, according to the description of other observers, analogy with them, and to which the synonym should be given only after fresh investigation. But I consider a revision and more accurate examination of the several inflammatory processes in the lung to be a not unimportant desideratum in pathological anatomy."

ART. 44.—*On Injections of the Bronchi in pulmonary diseases.* By Dr. J. HUGHES BENNETT, Professor of the Institutes of Medicine in the University of Edinburgh.

(*Edinburgh Medical Journal,* Nov., 1857.)

Dr. Bennett, it appears from this paper, has taken up Dr. Horace Green's plan (*v.* 'Abstract,' XXII, p. 237) of treating pulmonary diseases by injections into the bronchi, and he writes with "the view of recommending a practice which, if judiciously employed, may form a new era in the treatment of pulmonary diseases." What he has done already will appear from the following quotation from his paper:

"My period of attendance on the clinical wards having expired in January, it was not until last May that I had an opportunity of making a series of observations on this subject. I was then fortunately assisted by Professor Barker, of New York, who showed me the kind of catheter he had seen Dr. Green employ, and demonstrated the manner in which the operation was performed. Without entering into minute particulars, I have only to say that I have confirmed the statements made by Dr. Horace Green. I have introduced the catheter publicly in the clinical wards of the Royal Infirmary, in seven patients. Of these five were affected with phthisis in various stages—one had chronic laryngitis with bronchitis, and one chronic bronchitis, with severe paroxysms of asthma. In several other cases in which I attempted to pass the tube, it was found to be impossible; in some because the epiglottis could not be fairly exposed, and in others on

account of the irritability of the fauces and too ready irritation of cough from pressure of the spatula.

"My experience of this treatment is as yet too limited to permit my saying anything of its permanent effects. In the case of bronchitis with asthma, a female, æt. 24, I have now injected the lungs eleven times, at first throwing in two drachms of a solution of nitrate of silver, of the strength of half a drachm of the distilled salt to one ounce of crystallized water; and latterly I have thrown in half an ounce of a solution of the strength of two scruples to one ounce. She declares that no remedy has had such powerful effect in lessening the cough, diminishing the expectoration, or delaying the asthmatic paroxysms. She breathes and blows through the tube, when inserted four inches below the larynx, and I have been surprised at the circumstance of the injections not being followed by the slightest irritation whatever, but rather by a pleasant feeling of warmth in the chest (some have experienced a sensation of coolness), followed by ease to the cough, and a check for a time to all expectoration."

ART. 45.—*On the use of the Microscope in the diagnosis of Phthisis.* By (1) Dr. GUSTAF VON DÜBEN, of Stockholm; and (2) by Dr. THEOPHILUS THOMPSON.

1. (*Dublin Quarterly Journal of Med. Science*, Nov., 1856.)
2. (*Lancet*, July 11, 1857.)

1. The following remarks are taken from a review of a work by Dr. Düben, entitled 'A Review of the Contributions yielded by the Microscope to Medical Diagnosis.'

"If the practical physician meets with a patient who describes a previous pneumonia, of which his present illness is a consequence, or in whom the physical signs, in agreement with the history of the case and the rational symptoms, disclose the lesion which is developed in the lungs, he has no doubt as to the diagnosis. But if, on the other hand, he be called to a young patient, in whom all other modes of investigation are merely sufficient to establish the existence of a chronic catarrh, the microscope alone can decide whether this catarrh is uncomplicated, or whether tuberculosis lurks behind it. The honour of the discovery of the microscopic sign belongs to Professor Schroeder van der Kolk, of Utrecht, who published an essay on the subject which was translated into Swedish by Ehr. Ekströmer, Chir. Magr., and inserted in the 'Hygeia' for 1850, pp. 21—39. Singularly enough, the matter seems to have attracted but little notice, although it is, as I can testify from extensive investigations, of the greatest importance; the positive result has never as yet been disproved by the issue of the case.

"We know from pathological anatomy that in pulmonary catarrh the mucous membrane of the bronchi only is destroyed, and even this imperfectly, whether the disease has an acute or chronic course. The same is the case with acute pneumonia in process of recovery. In none of these cases can we, therefore, *a priori*, expect to find in the sputa any other elementary parts than those belonging to this membrane, and experience has confirmed this view.

"In pneumonia, on the contrary, which assumes a chronic form, or where, through the formation of pus, destruction of parts of the lung takes place, other portions of the bronchi, besides the mucous membrane, are attacked and are destroyed by the ulcerative process. The same occurs in tuberculosis. In both these cases we may beforehand expect, and afterwards find, in the sputa, fragments of the bronchial walls. The characteristic point in the sputa, from vomicæ, is the presence of the elastic filaments of these walls; they are *never* wanting so soon as a progressive vomica is met with.

"So soon as these elastic filaments are found in the sputum, they are certain signs of a vomica. It is, however, only important to seek them in cases where other signs are not sufficient to establish a certain diagnosis. Such a case is incipient tuberculosis.

"We usually find signs of more or less extensive chronic catarrh. The sputa consequently contain a great quantity of pus-cells, and of oval or round epithelium. They have all the external and microscopic characters of concocted sputa. If we now take out of such a sputum, with a forceps, a small portion from one of the clearer parts, we see in the white or whitish-yellow mass, and bring it thinly spread out under the microscope, at a magnifying power of 250, we usually find in it fragments of the elastic tissue, particularly if the tuberculosis is still recent. Experience has, in fact, shown that the elastic tissue is more easily found when the disease has not lasted long, and for this there are two reasons.

"In the first place, in tuberculosis of small extent, the catarrh is more limited to the bronchi coming from the tuberculized part; consequently, the formation of the sputa must take place there, and the latter therefore contain the object of our search in greater quantity; secondly, at the commencement of the ulcerative process, the tissue, being less completely destroyed, must yield large and more distinct portions to the bronchial secretion than afterwards, when a more violent action in the walls of the cavity breaks down the pulmonary tissue more perfectly before it can be separated. We have, therefore, in the sputum of recent tuberculosis, both a less volume to examine, and larger fragments to find—two very great advantages, as the question is precisely to be able to make an early diagnosis."

2. The remarks of Dr. Thompson are taken from the report of a meeting of the Harveian Society of London, held July 11, 1857. Dr. Thompson writes:

"Many years since, Mr. Quekett detected elastic pulmonary tissue in the sputum of patients not previously considered consumptive, and it was for a time supposed that a peculiar granular appearance of the expectoration might be regarded as characteristic of tubercular disease, even in the absence of any trace of elastic tissue. Finding, after a time, that this appearance could not be relied on as an indication of incipient phthisis, and embarrassed by the multiplicity of objects often present in the expectoration, Dr. Thompson for a time discontinued the investigation, any sanguine expectations which he had entertained being further discountenanced by the testimony of Rainey, Addison, and Bennett; but in an interview with Dr. Andrew Clark (to whose sagacious observation and faithful descriptions the

profession is greatly indebted), he had the gratification of learning that the subject had engaged his attention since the year 1846, and with such success as to enable him to show, in his lectures at Haslar, the real microscopical indications of tubercular sputum. With his friend's liberal and courteous assistance, Dr. Thompson soon became convinced that changes in the pulmonary vesicles, preceding the stage of destruction which occasions the elimination of pulmonary tissue, are manifested in the expectoration, and that information may thus be obtained, not only supplying valuable aid in diagnosis, but also furnishing instructive information regarding the morbid process concerned. Dr. Thompson showed, by a diagram enlarged from a drawing by Schrœder van der Kolk, that when tubercular deposit is present in the pulmonary vesicles, there may be seen, contrasting with the usual epithelial cells, some which are dark, swollen spherical; some more advanced, larger, and misshaped; others shrivelled or burst, and extruding nuclei, which nuclei, when enlarged, correspond with the 'tubercle corpuscles' of Lébert. The author then proceeds to show that the sputum of consumptive patients contains materials corresponding in appearance with the elements present in the air-vessels, and that before an amount of disease involving the elimination of elastic areolæ occurs, corpuscles of various sizes, jagged outline, setting free nuclei, and affording evidence of rapid disintegration, may be detected. The general moleculo-granular appearance (to which his attention had been originally directed, and which he much regretted having erroneously figured in his 'Clinical Lectures') was not conclusive; the sputum which is really characteristic containing isolated masses of moleculo-granular material, and having interspersed corpuscles of various forms, overgrown or jagged, and setting free nuclei; the various proportions of pus, or fat, or blood, giving collateral indications of the amount of surrounding deterioration in the lungs; while amongst evidences of rapid progress might be specified the appearance of large and numerous areolar meshes, still retaining their adhesion and elasticity. In chronic cases, portions of this tissue appear, inelastic, teased out, and broken down, in consequence of long imprisonment, whilst a diminished proportion of fat, and the appearance of cholestrine plates, and still more of earthy particles, were often indicative of a mode of restoration. The author proceeded to prove, by a brief narration of cases,—

"First, that with the aid of the microscope positive conclusions, not attainable by auscultation, could sometimes be formed regarding the existence of pulmonary disease.

"Case 1.—Mr. —, æt. 63, after an attack of pleurisy in the left side, during the spring of 1855, did not regain strength. Dull percussion and prolonged expiratory murmur over a small portion of the right apex were the only important auscultatory signs; but the expectoration, under the microscope, was found to contain blood-corpuscles, moleculo-granular matter, and lung-tissue broken down and unbent. More positive symptoms of decided phthisis, as reported by his medical attendant in the country (Dr. Sylvester of Trowbridge), soon appeared, and in a few months he died.

"Case 2.—Mrs. E—, a lady, æt. 39, whom Dr. Thompson attended with Mr. Marshall, of Bedford Square, during the early months of 1855, suffered

from obstinate sickness, which was supposed to depend on gastric affection. The persistency of the sickness and the progressive emaciation inducing an examination of the chest, some dulness on percussion with increased vocal thrill was observed near the sternal end of the second intercostal space on the right side. A little expectoration was obtained, and was found to contain shrivelled cells, lung-tissue, and isolated masses of granules. Some improvement of the general health occurred under soothing hygienic and tonic treatment, and the administration of cocoblein. But early in the year 1856 the expectoration became copious and flocculent; dulness on percussion was more extensively obvious; near the inferior angle of the scapula a click was audible, shortly followed by cavernous breathing. In March she died. An interesting contrast to this history was afforded by—

"Case 3.—A lady, æt. 38, who, in the autumn of 1852, had almost precisely the same auscultatory symptoms as were observable in Mrs. E—; but the occasional, slight, cloudy expectoration, from time to time examined, exhibited ciliary cells, some with long tails, probably tracheal, some in masses, as though from the follicles; but there were no tubercular elements. In harmony with the encouraging testimony thus afforded by the microscope, the general symptoms continue favorable, and have hitherto, during a period of five years, negatived the gloomy prognostications which an accomplished auscultator had perseveringly maintained.

Secondly: the author adduced the advantage of microscopical observation in confirming doubtful signs.

"Case 4.—E. T—, æt. 51, in the winter of 1854 was attacked with cough, hurried breathing, and some symptoms of hectic. The left lung had been extensively consolidated in consequence of pleuro-pneumonia ten years previously. Over a small space near the lower angle of the left scapula a sound could be heard, of which it was difficult to determine whether the correct designation were subcrepitation or click. Dr. Andrew Clark, who also obligingly examined the expectoration, reported that it contained shrivelled cells, large cells with shrivelled nuclei, and some earthy matter, and, without receiving any history of the case, offered the diagnosis of "Slight tubercular deposit, tending to restoration:" a diagnosis which was confirmed by the result.

Thirdly: Dr. Thompson described some favorable indications afforded by the microscope concurrently with the amelioration in the general condition.

"Case 5.—Mr. —, æt. 22 (introduced by Mr. Pinching, of Gravesend), five feet nine inches in height, in the summer of 1854 had dull percussion and a murmur over the left pulmonary artery, but no crackle or click; the expectoration, however, exhibited lung-tissue, tubercle-corpuscles, and blood-discs. He took cod-liver oil freely, at one period to the extent of a pint and a half in a week; and had iodurettted neat's-foot oil (a grain to the ounce) rubbed into the chest. After a time the expectoration beeame chiefly bronchial, disposed to fibrillate, and free from lung-tissue. The weight of this patient increased from ten stone one pound to eleven stone nine pounds. He spent last winter in Madeira.

Fourthly: the author noticed the important evidence sometimes derivable from the sputum, indicative of rapidity in the progress of disease.

"Case 6.—A lady in the country, æt. 43, who had been for two years the subject of phthisis, but whose friends did not fully realise the danger, had a decided aggravation of cough and weakness. Some expectoration, sent to town for examination, contained blood, copious pus-corpuscles, and numerous large meshes of pulmonary tissue, perfectly retaining their form and elasticity. A very unfavorable prognosis was consequently given, which was verified by the death of the patient a few days afterwards."

The author, in conclusion, ventured to express the opinion that his statements, although brief, were sufficient to support his proposition, that the microscopical inspection of expectoration might often afford, at a very early period of consumption, definite information, not otherwise attainable, regarding the nature of the malady; that in later stages of disease it might assist us to estimate the rapidity and progress, and at all times might furnish valuable aid in forming a correct prognosis regarding the course of the complaint. He trusted these few suggestions would stimulate to the investigation some of his professional brethren more accomplished in the use of the microscope, or more fortunate in the enjoyment of leisure.

Art. 46.—*Notes on the use of Glycerine in Consumption.* By Dr. Cotton, Physician to the Hospital for Diseases of the Chest at Brompton.

(*Medical Times and Gazette*, June 27, 1857.)

There is much difference of opinion as to the influence of glycerine upon cases of consumption. Not a few medical practitioners consider it scarcely, if at all, inferior to cod-liver oil, whilst there are not wanting those in whose hands it has entirely failed.

"With a view of testing its effects, (says Dr. Cotton,) I administered it—in doses varying from one to two, and occasionally three drachms, twice a day—to twenty-three of the in-patients of the Consumption Hospital; notes being carefully kept by the Resident Clinical Assistants, Dr. Stone and Dr. Sibbald. As the cases were not selected, and all of them were under the same dietetic and general hygienic conditions, the result may, I think, be regarded as a fair illustration of its influence.

"Only in five cases was there any improvement; in all of which the weight was slightly increased. In two of these, however, a much greater advantage was subsequently gained under the use of cod-liver oil; the weight of one patient having increased as much as two pounds per week.

"In seventeen cases either there was no appreciable improvement, or the patients became worse; and one, in an advanced stage of the disease, ended fatally. In nine of these cases more or less improvement occurred from the after-use of the oleum aselli; in four instances, indeed, the gain in weight was very distinctly marked.

"In five cases the glycerine either caused sickness, or otherwise disagreed with the stomach.

"To any objection which may be raised that the glycerine was not given for a sufficiently long period, I would merely observe, that even in the cases where some improvement was noticeable, it appeared to

me so probable that far greater good would accrue from the cod-liver oil, that I regarded a further trial of the other as unjustifiable; and that such an anticipation was, in some instances at least, not ill-founded, was sufficiently demonstrated.

"The following conclusions are, I think, irresistible, viz.:

"1. That glycerine has generally but little influence upon phthisical cases.

"2. That, as a remedial agent in consumption, it will bear no comparison with cod-liver oil."

(c) CONCERNING THE CIRCULATORY SYSTEM.

ART. 47.—*On restrained action of the Diaphragm in Pericarditis.* By Dr. BARLOW.

(*Medical Times and Gazette*, Sept. 5, 1857.)

In some clinical observations the other day, Dr. Barlow directed the attention of his class to the important indication furnished by the unduly restrained action of the diaphragm in certain cases of thoracic inflammation. He had especially noticed it in pericarditis, and more than once it had helped him to a diagnosis. The subject of pericarditis, anxious to avoid the pain caused by any movement, holds his whole chest as immovable as possible, but especially restrains the actions of the diaphragm. In the case of a boy who was admitted with this affection, it was found that he had tied a broad belt tightly round his body, in order no doubt to conduce to this end. Another case, Dr. Barlow stated, had impressed itself upon his memory in which this symptom was very well marked, and in which yet no pericardial rubbing sound could be detected. Death took place, and at the autopsy the pericardium was found full of pus, thus accounting for the absence of the friction sound.

ART. 48.—*A case of Disease of the Heart, with great dilatation of the Auricles.* By Dr. MARKHAM, Physician to St. Mary's Hospital.

(*Proceedings Royal Med. and Chir. Society*, vol. i, No. 3, 1857.)

Such a pathological specimen as is here described rarely falls under the observation of the physician. That such deviations from a healthy condition of the heart are, for a long period, compatible with existence, is an interesting fact. The patient, it should be remarked, had both the means and strength of mind sufficient to subject himself to a rigid discipline in diet and exercise, experience having taught him that great suffering resulted from the slightest deviation from the rules prescribed for his guidance. In physical diagnosis, Dr. Markham points out, that the case presents some special points of interest. It demonstrates, that a pulsation felt low in the right thorax, an inch and a half from the right edge of the sternum, may be cardiac, even though the heart be felt at the same time pulsating in the left

thoracic region. Again, a heaving pulsation in this latter region does not always indicate hypertrophy of the left ventricle, for here it was nearly normal in size. The thrill, bruit, and pulsation arising in the right auricle, are strange phenomena. How were they caused? They occurred during the auricular diastole, and probably had, all three, a like origin. It does not seem probable that they were produced by tricuspid regurgitation, for the tricuspid valves were large and sound, and the bruit, rough and loud, was not of the soft bellows-blowing kind. Thrill, again, over the right auricle, our best authors tell us, associated with tricuspid regurgitation, is unknown to them. These phenomena, then, may perhaps have had their origin in the rush of blood into the auricle from the venæ cavæ —a source of cardiac bruit not recognised in auscultation. The absence of muscular structure in the auricles proves that the force of the venous current is of itself sufficient to carry the blood on into the ventricles, unaided by any auricular contractions; and even when, as in this case, the circulation is impeded by a contracted mitral orifice. This case is very interesting, as showing the extraordinary degree of deviation, from its healthy state, of the heart, with which a long life is compatible, under certain conditions. It presents, in physical diagnosis, certain unwonted phenomena, little in unison with ordinary experience. It gives us a hint respecting the physiological action of the auricles; and it points out the value of medical art, in prolonging existence, when serious organic change has fallen upon a vital organ.

Case.—The subject of the following history came under the observation of the author three days before his death. He was sixty-nine years of age, and had been subject to cough for forty years. Twenty-six years ago he suffered from dropsy, and his life even was despaired of, on account of the extent of the dropsical effusions. Fifteen years ago he was told that the dropsy, the spasms, the short breath, and palpitations from which he suffered were the consequences of disease of the heart. These particulars showed that for about thirty years the patient had been the subject of organic disease of the heart. Of late years the symptoms of heart-disease had increased; exertion of any kind was very difficult, and brought on severe spasmodic attacks. When first seen by Dr. Markham the last agony was manifestly near at hand. He could not lie down in bed; his breathing was laboured; his pulse rapid and irregular. The scrotum and legs were distended with serum. The heart was felt beating with an extensive heaving impulse in the left lateral thoracic region, and also over the precordial region; the percussion sound over this region was extensively dull. At a point about one inch and a half from the right edge of the sternum, and in the fifth intercostal space, a pulsation, synchronous with the ventricular systole, was visible over a space of about three quarters of an inch; it communicated a strong thrill to, and forcibly raised, the finger. The stethoscope transmitted a loud bruit when placed over it. It was evident that the heart was much enlarged, and that there was extensive valvular disease in this case. But what occasioned the pulsation here described? The thrill and the bruit naturally suggested the idea of an aneurism; but how could an aneurism exist at such a part, and apparently without any connection with the heart or its great vessels? On the other hand, that the pulsation had no origin from the heart itself seemed indicated by the fact that the organ was felt beating in the left lateral region of the thorax. It was scarcely conceivable

indeed, under such circumstances, that any portion of the heart could occasion a pulsation so far away to the right edge of the sternum.

Necropsy.—On opening the thorax, the pericardium was found so distended as to reach across the chest, almost from side to side; its horizontal contrasted remarkably with its vertical diameter, and could not have been less than eleven or twelve inches. This enormous dilatation was caused by the dilated heart, and particularly by its auricles. On removing the organ, about three pints of blood, fluid and coagulated, escaped from its cavities. When the blood was wholly removed the heart fell together like a flabby membranous mass, having no trace of firmness in its texture. The right auricle occupied that portion of the chest, beneath the parietes, where the pulsation was felt; hence the pulsation, the thrill, and the bruit, took their origin within the right auricle. Both auricles were greatly dilated, especially the left, which measured sixteen inches in its widest circumference. The auricles also were reduced to the condition of mere membranous bags, no muscular tissue being perceptible in them, except in the appendix of the right. The right ventricle was dilated and hypertrophied; the left ventricle somewhat dilated; and the muscular tissue of both ventricles was in an advanced stage of fatty degeneration. The tricuspid opening was enlarged, but its valves were also enlarged and capable. The mitral opening was contracted into a hard narrow slit, about one inch long; the mitral valves being contracted, thickened, and united. The aortic valves were thickened, but capable.

Art. 49.—*On certain cases in which the Foramen Ovale was still patent in the Adult.* By Dr. J. W. Ogle, Assistant-Physician to St. George's Hospital.

(*British Med. Journ.*, June 13, 1857.)

This paper originates in a question arising out of a case recently recorded by Dr. Markham, (v. 'Abstract,' xxv, p. 93),—can an open foramen ovale exist without a bruit? Dr. Ogle's answer is in the affirmative. He does not say that he has shown reason for supposing that a murmur cannot, under any circumstances, be produced by the passage of blood through an open foramen, but there are numbers of cases in which, although facility for the passage of blood from one auricle to another exists, yet no unnatural sound is thereby of necessity induced.

"In the year 1851," says Dr. Ogle, "whilst curator of the Pathological Museum at St. George's Hospital, I took the opportunity of examining above one hundred and forty human hearts taken indiscriminately after death, for the purpose of ascertaining the condition of their muscular fibres.* Of this number, I examined sixty-two with a view of discovering the condition also of the foramen ovale, and found that out of the sixty-two, there were thirteen hearts which retained this foramen yet incompletely closed, although to a variable degree; thus giving a proportion of about one in five hearts in which communication of some kind or other existed between the cavities of the two auricles. This is, I believe, a greater proportion

* The results of the examination for this purpose are detailed at page 68 of the 4th volume of the 'Tranactions of the Pathological Society.'

than is generally considered to exist in the healthy human adult heart.

"These particulars, observed at the period I mentioned, have hitherto not been made available by me; but I have retained them in my note-book, thinking that at a future time some opportunity for their use might occur. Such an opportunity has been offered, in consequence of the observations of my friend Dr. Markham, regarding a case published by him in the number of this journal for April 4th, 1857. In this case of Dr. Markham's, a loud murmur coincident with the systole of the ventricles, and therefore synchronous with the diastole of the auricles, was heard along the base of the heart and in the entire left subclavicular region. Of some of his remarks in connection with the case, I shall speak at greater length further on.

"Having mentioned the fact of the comparatively frequent occurrence of an incomplete closure of the foramen ovale, I must qualify the observation by remarking, that the patency noticed allowed of very different degrees of communication between the two sides of the heart. In some of the cases, the opening remaining in the septum of the auricles was a mere fissure or oblique slit, arising simply from want of such an adhesion between the valves and the margins of the isthmus, as is wont to exist after the completion of the drawing up of the valvular fold and other preliminary contractile actions of neighbouring parts. This defective adhesion I may remark, is thought by Dr. Peacock to be the result of unequal pressure in the auricles from the blood, owing to the slow establishment of the pulmonary circulation after birth. The oblique slits, to which I have alluded, were directed variously, as it were, opening in some cases more widely from above, and in others from below, and would have allowed of the blood passing, as it would seem, more freely in some cases from the left into the right auricle, but in the majority of cases from the right into the left auricle. In several of these cases, the communicating opening was not merely that of a chink or slit, but was a decided round or oval aperture; in one case, admitting of the entrance of the tip of the little finger. In one or two cases, the opening was of a reticular character, having the appearance as if it had been produced by a falling short of one part of the margin of the valvular fold, so that it failed to be raised to the level of the isthmus, to which it ought to have been adherent; and as if the deficiency had been in part compensated for by bands passing across the vacancy. I was careful in my search for any trace of ulceration or of rupture which might have accounted for the opening, but this did not in any case exist.

"I have lately referred to the life histories of those cases which I have mentioned as presenting an imperfect closure of the foramen ovale, in order to ascertain what physical signs were noticed before death, which might be attributed to this imperfect closure.

"I will now enumerate the cases, and describe briefly the condition of the heart and also of the lungs in each of the thirteen cases in which I found the foramen only partially closed. Afterwards, I will add a short statement of the stethoscopic signs as observed during life, whenever I find that they were noted by my friend and colleague

Dr. Barclay, who at that time was medical registrar at St. George's Hospital.

Case 1.—A patient, æt. 41, affected by pneumonia, rheumatism, and eventually pericarditis. The chest was carefully stethoscoped when the patient came into the hospital, and special search was made for signs of peri- or endocarditis, but no *bruit* or friction-sound whatever was heard. After a time, when the anticipated pericarditis had appeared and become established, the ordinary murmurs were heard.

Case 2.—A patient, æt. 37, was admitted into the hospital, and died with pulmonary phthisis and vomicæ. After death, the heart, which weighed eight and a half ounces, was found healthy and natural, excepting the patency of the oval foramen. In the life history it is expressly observed that "the only thing made out by physical exploration of the chest was slight harshness of breathing on the right side of the chest." These particulars are given, but there is no mention whatever of any unnatural sounds about the heart.

Case 3.—A patient, æt. 25, was admitted into the hospital with dropsy and other symptoms of diseased kidneys. There were also symptoms of congestion of the lungs and enlarged heart; and a regurgitant murmur was heard at the root of the aorta. In the life history it is expressly stated that there was no double murmur; in other words, that no murmur existed synchronous with the systole of the ventricles. After death, the heart, which weighed twenty ounces, showed small fibrinous granulations upon the surface of the aortic valve-flaps.

Case 4.—A patient, æt. 38, died in St. George's Hospital of phthisis with vomicæ. The heart, which weighed ten ounces, was healthy, excepting the open foramen. In the life history a careful description of the physical exploration of the chest is given; but there exists no mention of any unnatnral heart-sounds.

Case 5.—A patient, æt. 32, who died of acute pleurisy and congestion of the lungs. In the life history, the physical signs, which were observed as connected with the lungs, are given; but no mention is made of any murmurs about the heart.

Case 6.—A patient, æt. 37, who died of abscess within the brain, connected with disease of the inner ear. After death, the lungs were found to be greatly gorged with blood. The heart, which weighed nine and a quarter ounces, presented small shreds and granulations of recent fibrine attached to the aortic valve-flaps; but otherwise, saving the patent foramen, it was natural. In the life history, it is stated that "the lungs appeared only to be affected with bronchitis."

Case 7.—A patient, who died with diseased kidneys and hypertrophy of the heart. After death, the lungs were found to be very gorged with blood. The heart weighed twenty-one ounces. Its walls were thick, and its cavities dilated; and its aortic valve-flaps, which were only two in number, were rigid and unpliable. It is expressly stated in the life history that "the heart's sounds were very feeble, but nothing abnormal was found."

Case 8.—A patient, æt. 32, who died of pleurisy, and was moribund when brought into the hospital. Slight scrofulous deposit was found within the lungs after death; and one lung was rendered quite useless by compression, from fluid accumulated within the pleural cavity. The heart weighed fourteen ounces, its walls being thickened.

Case 9.—A person, æt. 16, who died of peritonitis with bronchitis and pneumonia. The heart was natural, excepting the patent foramen. In the

life history, the sounds of the heart are not alluded to directly or indirectly.

Case 10.—A patient, æt. 38, was poisoned by prussic acid, and brought into the hospital dead. Excepting the open foramen, the heart was found to be natural.

Case 11.—A patient, æt. 60, was brought into St. George's Hospital with disease of the bones of the foot, and died of pulmonary phthisis with vomicæ. The heart was soft and flaccid; but, excepting the open foramen, was quite natural. In the life history, I find nothing whatever bearing upon the sounds of the heart.

Case 12.—A patient, æt. 45, who died of peritonitis and pneumonia. The heart, which weighed only five and a half ounces, was small; but, excepting the open foramen, natural. In the life history, I find nothing bearing upon the sounds of the heart.

Case 13.—A patient, æt. 48, was admitted with a fistula *in ano*, and died of pulmonary phthisis. The heart, which weighed nine and a half ounces, was soft and lacerable; the walls of the right ventricle being thinner than usual. In the life history, I find nothing relating to the sounds of the heart.

"Thus, in the preceding cases, thirteen in number, in which the foramen ovale was found to be but incompletely closed after death, there are seven in whose histories it is emphatically stated or to be inferred that no murmur synchronous with the systole of the ventricles, that is also synchronous with the diastole of the auricles, existed; and only one in which there is notice of any murmur with the diastole of the ventricles, that is, with the systole of the auricles. Consequently, excepting in this last single instance, we have the fact of six hearts in which more or less patency of the foramen ovale existed, but did not give origin to any unnatural sound whatever about the heart. In the solitary instance (Case 3), in which a regurgitant or diastolic murmur (so called) was heard, the heart was very large and soft, and recent granulations and shreds of fibrinous material, deposited from the blood, were adherent to the aortic valve flaps. It may therefore well be believed that this murmur was seated in the left ventricle, and had nothing to do with the septum of the auricles; if it had any such connection it must have been produced during the systole of the auricles, and therefore not at all similar to that in Dr. Markham's case which took place during the ventricular systole, and was supposed by him to be produced during the diastole of the auricles. As regards the last six cases, in which the closure of the foramen ovale was imperfect, I am sorry to say that the life history does not afford data from which any conclusive evidence as to the presence of cardiac bruits may be derived. It will be remembered that in all these thirteen cases the patients were adults. In none of them was there any cyanosis noticed during life, or congenital malformation of the heart or its vessels found after death. Moreover, there was no such condition of the valves or orifices of the heart as should primarily or secondarily tend in any material degree to impede the blood's exit from the auricles, and thus, as it were, throw greater pressure and stress upon the septum along with other parts of their walls, and lead to a mixture of the venous and arterial blood

through the foramen ovale. There was, however, in many cases, marked and extensive disease of the lungs, such as their occupation by the products of inflammation or scrofulous deposit, which, though to a less extent, would have a similar tendency as regards the right auricle.

"I may be permitted here, as I have his sanction, to append a case lately brought before the notice of the Pathological Society by Dr. Ogier Ward, which I will curtail. It bears strongly upon the point I am attempting to illustrate.

"The case was that of a child who died eleven days after birth, having been cyanotic and affected with dysphagia and choking on swallowing. The lungs and heart were auscultated during life, and it was noticed that the heart's sounds were natural, no bruit existing. After death, congenital communication between the trachea and œsophagus was found, with enlargement of the pulmonary artery and patency of both the ductus arteriosus and foramen ovale. The preparation is now in the Museum of the College of Surgeons. This case, added to those related above, makes the seventh case in which the foramen ovale was more or less patent during life, and in which we have evidence that no bruit was thereby produced."

ART. 50.—*A case in which ulceration of the large intestine was followed by obstruction of the common iliac veins.* By Dr. FINCHAM, Physician to the Westminster Hospital.

(*Lancet*, June 6, 1857.)

In commenting upon the pathology of the case, the author adopts Dr. Lee's views, and considers the phenomena above narrated to be due to absorption of pus or some other morbid fluid from the mucous surface of the lower portion of the large intestine, in which ulceration had doubtless existed. He considers that by means of the hemorrhoidal veins it was quite possible for morbid matter to find its way into the large venous trunks, and he fortifies his view by referring to cases on record, in which painful swelling of the lower limbs, with symptoms of venous obstruction, was found co-existent with ulceration of the mucous membrane of the colon and rectum. He refers to the 'Medico-Chirurgical Transactions' (16th volume), in which are recorded two cases of phthisis, in which ulceration of the large intestine had apparently caused symptoms similar to phlegmasia dolens; he mentions also other similar cases, though they were not verified by post-mortem revelations. He therefore considers absorption of morbid matters from the colon or rectum to be the primary cause of the symptoms of venous obstruction in the case narrated, and that the tendency to coagulation was increased by the anæmic condition of the patient, and consequent increased proportion of fibrin, as compared with the red globules, and by the sluggish manner in which the blood would be propelled through the vessels by the weakened heart.

CASE.—The patient, æt. 15, came under Dr. Fincham's care on May 14th, 1856. He was very anæmic, with a soft, weak pulse, 120, but his appetite

was good, and his skin of natural warmth; the urine was natural. He complained of diarrhœa, the motions being relaxed and bloody, with much pain at the extremity of the gut on going to stool and during defecation. Some pain also existed in the hypogastric and left inguinal regions, though the abdomen generally was soft and yielding. The rectum was examined by finger and by speculum, without detecting anything; the motions were, however, very slimy, offensive, and bloody. The symptoms yielded to treatment, and upon their return he was re-admitted into Westminster Hospital. The frequency and the nature of the evacuations were now improved, but blood was still passed. On July 4th, without any rigor, he complained of pain about the right knee, the soft parts about being swollen and œdematous. On the 5th, the swelling, though less, had extended up the thigh. On the 7th, there was pain, increased by pressure, over the iliac and inguinal regions, the pain extending a short distance down the inner aspect of the thigh; there was fulness though no hardness in these parts. On the 10th, there was œdema of the right foot. On the 16th, the pain diminished, and the general swelling was reduced, but on the next day both symptoms were aggravated; the right thigh and the inguinal region had become very painful and swollen, and the superficial veins distended. Though the pain was very severe, there was no fever nor constitutional symptoms. On the 18th, the superficial veins over the whole abdomen, as well as those on both of the lower extremities, became considerably distended. On the 23d, the parts affected remained œdematous, with the scrotum, until the middle of August, when it disappeared; the superficial veins, however, never diminishing to any notable degree. He was discharged towards the end of September, when his condition was as follows:—There was great enlargement of both internal saphena veins; the abdomen and the flanks were covered with a network of vessels manifestly consisting of enlarged and tortuous branches of the epigastric and circumflex iliac veins, through which, as was evident on pressing them, the blood flowed in an upward current. This network of veins inosculated with the mammary vein, enlarged branches of which were visible on the chest; by this channel, and through the intercostals (probably), the blood was returned to the heart. This state of things existed on December 30th, when he was last seen.

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 51.—*On the Prevention of Constipation.*
By Prof. PHŒBUS, of Giessen.

(*Prag. Vierteljahrsschr.*, Bd. lii; and *Med. Times and Gazette*, May 23, 1857.)

Professor Phœbus refers habitual constipation to the following causes, which may act separately or together:

1. The too spare employment of articles of diet which promote the action of the bowels. Among these water is to be placed in the first rank. Either from its not being of convenient access, or its quality being bad, this drink is taken by many in insufficient quantity. In sedentary occupations the sensation of thirst is too seldom excited, and the habitual frequency of such sensation may become much diminished if the satisfaction of the call be neglected. To this class of aliments also belong fruits, salads, sour milk, honey, and fat. Many country people, who sell all their produce, eat little of these things

except salad; and the poorer inhabitants of towns often get them only in insufficient quantity. Those persons who can procure them usually eat salads and fats in too small quantities; sour milk easily excites diarrhœa, fruits may cause flatulence, and honey is not always obtainable good.

2. Too little bodily exercise.

3. Want of exercise of the powers of the large intestine. This is the most influential of all the causes. It is an error to suppose that the power of the will extends only over the sphincter; for it prevails much higher, only it requires considerably more time for its exertion. Several minutes, or a quarter of an hour, may be required to initiate the evacuatory movement, and the uninitiated may fail altogether in the attempt. By exercising it, we increase the disposition of the intestine to act, but, under any circumstances, this is rarely the case in less than five minutes. By paying attention we may plainly feel the intestinal movement, and convince ourselves that it is independent of the action of the abdominal muscles: for although the action of these muscles gives the first impulse to the movement, they contribute little or nothing to its progress.

Numerous are the remedies which have been recommended for constipation; but the action of medicinal substances in so chronic an affection may easily become prejudicial; and especially such as exert a chemical or functional action, such as the salts or drastics. In the great majority of cases no other means are required than those indicated by the above-mentioned causes. The commonest of these is the want of exercise in the large intestine. If a stool is desired, the patient must earnestly practice the necessary gymnastic, which consists in alternate movements of the rectum as during actual evacuation, and in rapidly drawing in and then expanding the abdominal muscles. Such movements may be commenced in the chamber and completed in the closet, several minutes, a quarter of an hour, or even more, being required. If evacuation has commenced, but has not proved productive enough, the movements must be continued, the person making a firm resolution not to quit the closet until the aim has been completely attained. The movements are, in fact, the same as those normally employed; but they are more rapid, and continued for a longer time. Kneading and rubbing the abdomen, recommended by some, are also useful, but as a general rule they are quite unnecessary; and may be reserved for those who are not able to follow the above directions, such as children, insensible persons, &c.

As a general rule, an adult should compel a stool every day; and the author does not agree with the statement that some individuals may be content with fewer, believing that such constipation often aggravates morbid conditions. In from four to eight weeks, and without the necessity of observing the same hour, a complete mastery may be acquired over the intestine, so that a stool may be always secured once in the twenty-four hours. Although this is the most powerful agency in overcoming habitual constipation, and will succeed alone, yet it acts more efficiently when conjoined with articles of diet favorable to an open state of the bowels. A larger quantity of water will be more easily drank if at first carbonic acid gas be added. An

adult, during winter, should take from sixty to eighty ounces daily (deducting from this the equivalent of any artificial drinks he may take), a larger quantity still during great bodily exertion, and from one and a half to twice the quantity in summer. When raw fruit gives rise to flatulence, it may be taken cooked with spices, and especially when dried and cooked. With greater regularity of stools, also, flatulence becomes less, the food being retained for a less time within the canal. Other artices of diet, as salads and fat, should also be taken in moderation. Exercise, whether on horseback or foot, if continued, is of great service; but it exerts no sudden effect, and at first may even induce constipation.

Trying the plan upon himself when a student, the author has, during twenty-eight years of practice, recommended it to an immense number of persons, and in the great majority of cases with complete success. For himself he has attained the power of procuring a daily stool at any convenient time between four o'clock a.m. and mid-day, the average time required being a quarter of an hour. Only on one occasion during thirty years has he failed in his object. Where it fails it is from the want of the necessary strength of purpose. The plan is not so suitable for the aged; and is inapplicable to women during advanced pregnancy, or in organic disease or prolapsus of the uterus. When from insufficient perseverance the means does not succeed, cold water clysters form the best supplement; and, exceptionally, salt and oil, with camomile tea, &c., may be thrown up. The author never gives purgatives by the mouth in chronic consipation, believing it to be most impolitic to irritate the stomach and small intestine, disturbing chylopoesis, and introducing into the blood materials that are always more or less injurious.

Art. 52.—*On Gastro-colic Fistula.*

By Dr. Murchison, Assistant-Physician to King's College Hospital.

(*Edinburgh Medical Journal*, July and Aug., 1857.)

Dr. Murchison's object in this very elaborate and valuable memoir, is to bring together an account of the cases of gastro-colic fistula which have been recorded, and of the preparations which exist in our museums, in order to draw some conclusions as to the pathology and diagnosis of the lesion. Upwards of forty periodicals, English, American, and Continental, and all the anatomical museums within reach, have been carefully ransacked for material. The proper subject of the memoir is also introduced by some general observations on fistula of the digestive canal, in which some valuable information will be found.

Thirty-three cases of gastro-colic fistula are related, which may be classified, as regards *the mode of origin of the fistula*, in the following manner—

Cancer commencing in stomach . . .	20 cases.
„ „ colon . . (case 11)	1 „
Simple ulceration commencing in stomach, in two cases, with sloughing .	8 „
„ „ in colon . (case 6)	1 „
Abdominal abscesses originating external to both stomach and colon	2 „
Softening of tubercular matter	1? „
	33

And with respect to the *situation of the opening in the stomach*, the analysis of these 33 cases gives the following results:

In 4 cases,	opening at or near fundus	(4, 5, 19, 32).
„ 10	„ great curvature	(2, 6, 8, 9, 11, 18, 27, 29, 30, 31).
„ 11	„ at or near pylorus	(7, 10, 12, 13, 14, 20, 22, 25, 26, 28, 33).
„ 8	„ doubtful	(1, 3, 15, 16, 17, 21, 23, 24).
33		

In reference to the *diagnosis* of gastro-colic fistula, Dr. Murchison considers the symptoms according to three different stages of the affection—the previous disease, the period of formation of the fistula, and the fistula fully established.

"I. *The symptoms of the disease which give rise to the fistula.*—The great majority of cases (28 at least out of 33) have been found to result from either cancer or simple ulceration of the stomach. The symptoms of these affections (epigastric pain, vomiting, cachexia, &c.) are sufficiently characteristic, and so well known, that it would be superfluous here to consider them. I would merely desire to impress the importance of ascertaining the previous existence of either of these complaints, in cases of suspected gastro-colic fistula. Moreover, as the fistula is more than twice as frequently a sequela of cancer as of simple ulcer, the existence of an epigastric tumour would, *cæteris paribus*, be favorable to the supposition of its existence. Out of the 21 cases depending on cancer,

In 10, the history is either absent or imperfect (1, 5, 12, 13, 14, 15, 16, 17, 22, 23).
In 3, a tumour was absent or not mentioned (9, 10, 32).
In 8, a distinct tumour could be felt (7, 11, 18, 20, 26, 28, 31, 33).

Thus, out of 11 cases of cancerous fistula, a tumour was detected during life at least in 8. In case 29, also, in which there was no cancer, 'a firmness' was felt on pressure over the epigastrium.

"II. *Symptoms at the period of formation of the fistula.*—It is probable that sometimes the fistula may form, without any characteristic addition to the previously existing symptoms marking its advent.

Thus, in case 2, the first symptom of the fistula (fecal vomiting) came on suddenly, after some weeks of dyspepsia, when the patient was walking in the street, and was attended by no other unpleasant feeling. In many of the cases, however, the formation of the fistula appears to have been accompanied by some local symptoms, or by disturbance of the general system; and perhaps this has more frequently been the case than has been observed. Thus, in case 11, the symptoms indicating the existence of fistula were preceded by pain in the abdomen and the passage of shreds of disorganized mucous membrane *per anum;* in 18, by diarrhœa; in 20, by general pain over the abdomen, urgent vomiting, and quick pulse; in 21, by violent pain in the belly; in 26, by the symptoms of peritonitis, sudden violent pain in the abdomen, vomiting, collapse, &c., while, at the same time, the patient himself felt 'as if something had burst in his belly.' In case 29, there was pain and sickness for several days; and in 33, rigors, great prostration, vomiting, brown tongue, and irregular, intermitting pulse. Cases 11 and 26 particularly deserve attention in future observations.

"III. *The symptoms and physical signs after the formation of the fistula.*—When a communicating aperture has been formed between the stomach and colon, there is no barrier to prevent the contents of the one viscus passing into the other, fecal matter from entering the stomach, crude and undigested food from passing into the colon, and so being voided *per anum.* These results are what might have been naturally expected from the new condition of the parts; and they are what we actually find. Fecal vomiting and the presence of undigested food in the stools are the most frequent and characteristic symptoms of gastro-colic fistula. I shall now consider each of these symptoms, as well as some others, a little in detail.

"1. *Vomiting.*—This has been an almost invariable symptom in all the cases observed during life, in which there has been a free communication between the stomach and colon; and in the majority of cases the vomited matters have contained fæces. The following analysis shows the frequency of the symptom in the 33 cases:

In 11 cases, fecal vomiting (2, 7, 8, 11, 18, 19, 21, 27, 29, 31, 32).
„ 3 „ vomiting very fetid (9, 20, 33).
„ 3 „ vomiting not fecal (10, 25, 26).
„ 2 „ no vomiting (4, 28).
„ 2 „ history imperfect (1, 30).
„ 12 „ no history (3, 5, 6, 12 to 17, 22, 23, 24).

"1. Fecal vomiting is probably present in all cases in which the opening (except this be very minute) is situated in the fundus, or great curvature of the stomach, and may also be present when the disease is in the pylorus.

"In all cases in which only food is vomited, the opening is at or near the pylorus, so as to preclude the passage of food.

"The fact that food only should be vomited, when there is great obstructive disease of the pylorus, is what might have been expected, and admits of another explanation besides that given by Dr. Gairdner. When there is great obstruction at the pylorus, all the food will pass

at once into the colon, and so down to the rectum, and little or none through the pylorus into the small intestines. But if no food enter the small intestines, no fæces can be formed before arriving at the opening in the arch of the colon, and none can enter the stomach. This diminished function of the small intestines accounts for the fact, that after death, in several cases, they have been observed contracted and empty.

"In cases of cancer of the pylorus, vomiting might be less after the establishment of the fistula than before; the food in the former case escaping at once in the colon.

"It is not to be forgotten that fecal vomiting may originate from other causes, such as any obstruction of the bowels, as from strangulated herniæ, intussusceptions, organic stricture, &c. The history and the other concomitant symptoms of such cases, are generally sufficiently marked to prevent the possibility of their being mistaken for gastro-colic fistula. At the same time it is possible to have organic disease of the stomach, accompanied by stricture of the colon, as in a case recorded by Mr. Holmes, in the 'Edinburgh Medical and Surgical Journal,' vol. viii, p. 151; and, if fecal vomiting occurred under such circumstance, the diagnosis would be difficult. There is one distinction, however, between the fecal vomiting in any of these affections and that from gastro-colic fistula, which it is important to bear in mind. In the case of obstructive disease there is also obstinate and intractable constipation; whereas, in gastro-colic fistula there may be diarrhœa, or, if the bowels are costive, there is no great difficulty in moving them.

"2. As another consequence of fæces entering the stomach, there may be a *fecal odour of the breath*, and an intolerable *taste of fæces*, as in case 29; or there may be peculiarly fetid eructations, as in cases 8 and 9. In two, if not in all three cases, there was also fecal vomiting.

"3. Again, in cases where a cavity exists between the stomach and colon, which also opens outwards through the abdominal parietes (3, 11? 33), *food, as well as fecal matter, may escape through the external opening*. In case 3, there is no history; and in 11, it is doubtful if the external opening passed into the cavity. Fetid gases and fecal matter, however, were observed to exude from the external fistula in case 33; and, although there is no mention of food having been observed in this case, it is possible that this may have been overlooked. In connection with this point, there is an interesting preparation in the museum of Charing Cross Hospital (G. 21). This is a cancerous stricture of the arch of the colon, in which the colon above the stricture communicated with the duodenum, and also through the abdominal parietes, with the external surface. In this case, 'any fluid taken into the stomach, flowing by the duodenum into the colon, made its appearance in a few minutes at the umbilicus.'

"4. *Passage of undigested food per anum.*—It is to be regretted, that in so few of the cases was any observation made upon this interesting point. In 7 only is there any mention made of the appearance of the stools after the probable formation of the fistula (2, 8, 18, 19, 25, 29, 32). In 18, they resembled the matters vomited, and

contained curdled particles of milk (the sole article of diet); and in 32, milk and other substances, if not vomited, 'passed off instantly by the bowels.' In case 29, the stools had the same character as the matters vomited, which consisted of 'fæces mixed with undigested food;' and in 2 and 19, the stools and vomited matters are described as undistinguishable. In 25, the stools were described to Dr. G— (by nurse?) as normal; yet half-digested food was found in the colon after death. In case 8 only are the stools said to have contained no undigested food; yet they were imperfectly formed, being pale, like those of jaundice; so that milk, of which probably the patient's diet principally consisted, would have been difficult of detection in them.

"For the same reason that fecal vomiting is rarer when the pylorus is obstructed, it may be expected that future observations will show that undigested food in the stools is then most common. The food cannot pass through the intestinal tract to form normal fæces, but escapes at once, by a short cut, to the anus. The greater the obstruction at the pylorus, the more readily will the food pass at once into the colon (provided the aperture of communication be of sufficient size); and consequently the less probability will there be of fecal vomiting, and the greater of undigested food being observed in the stools.

"Undigested food may be found in the stools under other circumstances than that of gastro-colic fistula; but these as yet do not appear to be very clearly understood, for medical men too often rely for the appearance of the stools upon the observations of the nurse or of patients themselves. This symptom is occasionally observed in the diarrhœa of children. Dr. Lyons, likewise, has recently observed in the Crimea a form of diarrhœa, in which 'the egesta often differed in appearance but little from the ingesta; thus solid fragmentary particles of various kinds of food, animal as well as vegetable, could be readily detected in the fæces, still preserving their ordinary physical qualities.' This affection was attributed to an atonic condition of the alimentary canal, and to the difficult assimilation of the 'preserved meats and vegetables,' on which the troops were fed. None of the cases proved fatal. The same symptom may also result from ulceration of the pylorus, producing a widening of this orifice, and destroying its action as a sphincter during digestion. Schönlein describes such a case, in which pieces of fish, potatoes, &c., were found undigested in the stools. He also mentions the manner in which he succeeded, during life, in distinguishing the affection from gastro-colic fistula. He gave the patient a meal, of which the ingredients were coloured with cochineal, in order to see how soon the colouring matter would appear in the stools. This meal was followed by seven stools; and it was only in the seventh (almost twelve hours after the meal) that the colouring matter first appeared. Hence he concluded that his case was one of widening of the pylorus, and not of gastro-colic fistula.

"Although the causes which may give rise to the presence of undigested food in the stools have not been much studied, the observation is one of great antiquity. It is this affection which Hippocrates and all the old authors described under the name of *Lienteria*. Galen, in his commentary on one of the aphorisms (lib. vi, aph. 1) of Hippocrates,

tersely observes: 'Levitas intestinorum (vel lienteria) est velox exitus eorum quæ comeduntur atque bibuntur, quæ talia deficiuntur, qualia fuére devorata.' This lienteria was supposed to depend on two causes, paralysis of the stomach and intestines, or ulceration from acridity of the humours; the former being distinguished by the absence, and the latter by the presence, of pain. It seems highly probable that gastro-colic fistula existed in some cases of the so-called lienteria.

"5. *Emaciation.*—This was particularly noticed in 12 out of the 21 cases of which there is any history; and in all it probably existed. In most it no doubt depended on the original disease; but in case 18 it is noted as particularly rapid after the formation of the fistula; and in case 11, as only commencing after this.

"6. Among *other symptoms of less importance* may be mentioned the following: The appetite for the most part failed entirely; but in one case (29), it was noted as craving and accompanied by great thirst. In one case (26), the vomiting, which had previously existed, seemed to cease for a time after symptoms which indicated the perforation. But sudden cessation of vomiting may take place in the latter stages of ordinary cases of cancer of the stomach. In case 25, the vomited matters contained sarcinæ. In 5 cases (2, 10, 11, 25, 31), hæmatemesis is noted as having occurred; and in case 10 this seems to have been the most prominent symptom during life, and was accompanied by severe colic and melæna. In 3 cases (8, 21, 29), loud rumbling noises were frequently heard in the abdomen. The bowels were generally very costive (11, 19, 20, 21, 25, 26, 33), which symptom, when neglected, always was followed by an aggravation of the fecal vomiting; in 4 cases, however, there was diarrhœa (9, 18, 23, 31); in 10 and 23, the stools contained blood.

"An alteration or absence of the voice was observed in 3 cases (1, 18, 26). Some stress has been placed upon this, as a diagnostic symptom, by Diruf; but in the two last cases, at least, this appeared to result merely from the state of collapse of the general system; and in 26, the voice returned with the disappearance of collapse.

"In six cases (8, 11, 20, 28, 29, 33), death was preceded by general dropsy, or anasarca of the lower extremities; and in 1 (28), by purpura.

"In most cases there was pain referred to the epigastrium, or some part of the abdomen; but in 2 cases the absence of this was remarkable. In 21, there was no pain for many months before death, although this at first had been severe; and in 19, in which the fistula existed for upwards of two years, so little inconvenience was experienced that the patient was able to follow his ordinary employment till within three months of death.

"7. *Auscultation and percussion.*—It is not probable that either of these means of diagnosis will be of much service. At the same time, from observations made in certain of the cases, they demand a passing notice. Dr. Levinstein, in case 8, heard, on applying the stethoscope over the left hypochondrium, gurgling râles, similar to what are heard in a vomica of the lung; and from this he diagnosed the existence of some internal fistula of the stomach, which, from other symptoms, he

concluded to be connected with an abscess of the liver. Notwithstanding the approach to accuracy of Dr. Levinstein's diagnosis, the value as a diagnostic symptom of gurgling râles heard over the stomach appears very questionable. In case 29, a 'splashing sound' was heard on percussion of the abdomen. Again, in 2 cases (18, 31), a hard tumour was felt in the epigastrium, which, in place of being dull, yielded a tympanitic sound on percussion. In case 31, this sign attracted the particular attention of Dr. Bell, who was perfectly ignorant of Diruf's previous observation. It may have been due to the excavated nature of the tumour.

"8. *Vomiting of enemata.*—A very interesting observation was made by Dr. Reeves in case 32. Fluid enemata, if much force was used in their administration, passed from the colon into the stomach and were vomited. This fact suggests an important aid to our diagnosis. If in any case a *coloured* enema was rejected by vomiting, the existence of a gastro-colic fistula would be rendered almost certain. The passage of the enema into the stomach would be favoured by elevating the lower part of the body during the experiment.

"From the symptoms which have just been enumerated, it must be obvious that the diagnosis of gastro-colic fistula need seldom be a matter of doubt.

"1. We have, in the first place, almost invariably the symptoms of either cancer or perforating ulcer of the stomach for a greater or less period.

"2. Then we have symptoms, more or less marked, indicating the formation of the opening.

"3. When the opening is fairly established, there is very generally vomiting of fæces.

"4. Fecal vomiting, supervening upon the symptoms of cancer or perforating ulcer of the stomach, would render its diagnosis tolerably certain.

"5. Where fecal vomiting is absent, there will be the greater probability of our finding lienteria; and this, with the other symptoms and signs enumerated, would in general leave little doubt as to the nature of the case.

"6. When there is lienteria without fecal vomiting, there will probably be found disease of or near to the pylorus, or a very large fistulous communication.

"7. In a case with neither lienteria nor fecal vomiting (which probably will never occur, except the communicating aperture be very small), it is unlikely that the lesion would be suspected; but even then its existence might be guessed from observing a greatly increased rapidity of emaciation, and a relief from previously existing pain, combined with the results to be derived from coloured enemata and percussion."

ART. 53.—*Enlargement of the Spleen and the Lymphatic Glands generally.* By Dr. ROGERS, Medical Registrar to St. George's Hospital.

(*British Med. Journal*, May 16, 1857.)

The following case occurred under the care of Dr. Page, in St. George's Hospital.

CASE.—M. B—, a housemaid, æt. 39, who generally enjoyed good health, was admitted on February 9th, 1856. A month before admission, she had a smart attack of fever, and during her convalescence, perceived an enlargement in the left hypochondrium, for which blisters were applied. On February 7th, œdema of the legs came on. When first seen, the abdomen was very tense, and indistinct fluctuation could be felt. She complained of burning pain in the splenic region; and here there was greatly extended dulness on percussion. There was no vomiting; the bowels were costive; the tongue dry and brown; pulse 108, full, and easily compressed. Her appetite was indifferent, and she slept badly. The face was sallow, and her general appearance cachectic. Fomentations were applied to the abdomen; five grains of blue pill given at night; and a saline draught every six hours. The urine was examined on the following day, and found to contain beautifully perfect and very large crystals of uric acid.

February 13th.—She had an attack of erysipelas, confined to the neighbourhood of the right temple. At this time there was more pain and distension of the abdomen, dependent chiefly on flatulence and constipation.

Three days later, all the erysipelatous inflammation had vanished; her bowels were open; the skin moist; and she seemed improving; but there was remarkable feebleness of the pulse, for which port wine was ordered.

21st.—The abdominal swelling had increased, and there was more distinct fluctuation, and a depression just below the ensiform cartilage. The allowance of wine was augmented, and quinine given three times a day.

She went on much the same up to the 27th, when she was attacked with dyspnœa and acute pain in the back. Both legs, but especially the right one, were very anasarcous. The urine contained a small quantity of albumen.

29th.—The pain in the left side of the abdomen was so severe that nothing but constant friction by an attendant gave the least relief. The glands in the neck and groin were noticed as large and hard, but there was no tenderness in any of them.

March 2d.—Delirium came on; her features were more pinched and sallow; and by the evening of the 3d, she was moribund.

An examination of the body was made thirty hours after death. The pectoral muscles were small and pale. The pericardial sac contained a little clear yellow fluid. The heart was small, with a white patch on its surface. The valves and orifices were natural. The lymphatic glands about the root of the heart were very much enlarged, and very solid. The anterior mediastinal glands were not affected. The left pleura contained a large amount of turbid fluid; the right pleura was about a third full of clear yellow serum. The base of the right lung was consolidated to a very slight extent; and, with this exception, the lungs and bronchial glands were healthy. The peritoneal cavity contained three pints of clear yellow fluid. The mesenteric glands were enlarged. The kidneys were very granular in one or two places, their capsules being adherent; they were of an uniform yellow colour, their surfaces being marked by stellate vessels. In the pelvis of the left kidney, a considerable

amount of bright clear uric acid was found. The liver was very large, with sharp well-defined edges; its surfaces, both outer and sectional, were marked by light-coloured spots of various sizes, but none exceeding that of a pea. The spleen was of a dark blue colour, and very large, reaching down as far as the anterior superior spinous process of the ilium; the upper and smaller end being flattened against the diaphragm, and bent on itself. It weighed four pounds. On section, it showed several light wedge-shaped patches, which a microscopic examination discovered to be of the same kind as those observed in the liver. The pelvic, dorsal, and lumbar glands, and those about the pancreas and the small omentum, were all very large and firm, some of a light flesh-colour, others dark and somewhat softer. The whole chain of glands along the iliac and femoral vessels, on both sides, was affected in a similar way. The thyroid gland was also large; and the deep cervical glands were firm, large, and dark coloured. The cranial bones were natural. The dura mater was very adherent to the vault of the skull, and its inner surface was lined at the vertex, with an exceedingly thin layer of soft fibrine, discoloured by specks of bloody colouring matter. In other respects the brain was natural.

Dr. Ogle, the pathological curator, made a careful microscopical examination of the enlarged glands, and of the diseased patches in the spleen and liver. Immense numbers of white corpuscles were found; and bodies like pus-globules, with occasional large cells or vesicles, with large nuclei, the number in each cell varying from one to four. In the splenic blood, besides the above elements, large cells, with seven or eight nuclei of great size, were seen; and similar bodies were found in the inferior vena cava and azygos vein. The blood in the cranial sinuses was natural.

Art. 54.—*Case of suppuration of the Spleen.*

By Dr. Cathcart Lees, Physician to the Meath Hospital.

(*Dublin Hospital Gazette*, Sept. 1, 1857.)

Suppuration of the spleen is seldom met with, and its symptoms are generally very obscure. Dr. Lees made the diagnosis of enlarged spleen from the physical signs alone, as there was nothing in the history of the case or in the symptoms, indicative of disease in that viscus (or indeed of suppuration in any part), unless we may regard the bleeding from the nose as such.

Dr. Morehead, in his recent valuable work, 'Researches on Disease in India,' vol. ii, p. 165, states that he never saw a case of abscess of the spleen, and Rokitansky says, that "though inflammation of the spleen may occur as a primary affection, yet it is as rare as spontaneous primary inflammation of a vein, but as a secondary affection it is as frequent as a secondary phlebitis, being in fact identical with that process, and nothing more than the metamorphosis of an infected coagulum within the channels of a vascular ganglion."

Case.—A delicate looking man, æt. 23, a labourer much emaciated, has a large irregular-shaped tumour occupying the left hypochondriac and lumbar regions, and extending upwards laterally, as there is dulness on percussion up to the left axilla. That side appears bulged out, and is an inch larger than the right; but there is no obliteration of the intercostal spaces, no œdema of the side, or distended veins over that part; nor is there any displacement of

the heart. There is slight dulness posteriorly, but respiration is audible all over that lung, feeble posteriorly and mixed with sibilant and sonorous râles, but puerile under the clavicle. The tumour feels hard, but is not tender, and he lies best on the right side. He states that he has been delicate for the last three years, with an occasional sense of soreness in the left side of the abdomen, and has gradually become weak and emaciated, but never had intermittent fever. He has never vomited blood, or passed any from the bowels, but is very subject to bleeding from the nose, often two or three times a day. There is no ascites nor œdema of any part. His pulse is small and quick, but he is not subject to rigors or perspiration. He died quietly a few days after this report, and on examination the spleen was found enormously enlarged, and full of purulent matter enclosed in a cyst, formed by the obliterated parenchyma, which had been converted into fibrous tissue. The other viscera were sound.

Art. 55.—*Case of congenital absence of the Supra-renal Capsules.* By Dr. Martini, of Florence.

(*Glasgow Med. Journal*, July, 1857.)

This case was communicated in a letter to M. Flourens, and by him read before the Academy of Sciences at Paris.

Case.—"In one of the wards of the Hospital of Incurables, Naples, G. M—, a man, aged forty years, died of pulmonary tuberculosis. On inspection, M. Martini was surprised at first not to find the kidneys in their proper place, but soon perceived, over the promontory of the sacrum, the existence of a lobular ovoid mass: this was a fusion of the two kidneys into one single body.

"This renal body received from the aorta a single emulgent artery, which soon divided into four branches, corresponding to the veinous branches, which likewise reunited in one emulgent vein. Two ureters of the ordinary calibre, but very short, went to the bladder. The mass of this body was divided into five lobes, and its anatomical structure was that of a normal kidney. This anomaly was accompanied with a total absence of the supra-renal capsules, of which there was not a single trace, nor, on minute dissection of the five lobes, could any vestige of them be seen.

"This man had a *white* skin; had lived up to forty years, and died of a malady of the chest; he had sufficient strength to work at his trade of joiner; was married, and had three sons."

Art. 56.—*The gaseous treatment of Intestinal Obstruction.* By Mr. Tate, of Westpoint, Georgia, U.S.

(*Southern Med. and Surg. Journal*; and *Dublin Med. Press*, Oct. 14, 1857.)

The following case is cited, not for imitation, but as a surgical curiosity. The patient was a negro, æt. 27, who had suffered for two days from strangulated inguinal hernia on the right side, upon whom the ordinary operation for that accident had been performed a few hours previously. The treatment in other respects had been vigorous, comprehending bleeding to syncope, chloroform to the limit of safety, and purgatives, as will appear, beyond all ordinary bounds. The time is the afternoon of March 18, 1857.

"Being well satisfied," says the author, "that an intussusception, or other mechanical obstruction, existed above the strangulated point, and having, as I conceived, used every remedy worthy of trial in such a case, I determined to proceed upon my own responsibility, let consequences be as they might; therefore, I began again the use of warm water enemas, throwing them into the bowels slowly and cautiously, and after having introduced, by a pump syringe, one gallon of water, I next dissolved forty grains of tartaric acid in four ounces of water, and introduced that into the intestine; had a large compress prepared and placed in the hands of a strong negro fellow, with instructions to apply it to the anus, and hold it there, so as effectually to prevent the escape of either gas or water after I should introduce forty grains of bicarbonate of soda, dissolved also in four ounces of water. The soda was introduced, the compress used admirably, and poor Will, rolling on the floor, cried at the top of his voice, "I shall burst, I shall burst; take that thing away, my bowels are tearing in two." The compress was removed; gas, water, and fecal matter escaped freely, to the astonishment of all by-standers. In half an hour the same amount of warm water, tartaric acid, and soda, were used again, and with the same happy effect.

"The only medicine given after this was calcined charcoal, which passed through his bowels with no difficulty. All being well satisfied that the obstruction was fully overcome, and Will declaring himself cured, he was discharged on the 20th. Now, as to the *rationale* of the treatment, we presume all who are at all familiar with the anatomy of the intestines, or the generation of gases and their expansibility, will readily understand. In order that the gaseous treatment may be fairly appreciated, it becomes necessary that a partial recapitulation of the treatment be here introduced. By reference, it will be seen that the boy had taken of castor oil, five ounces and a half; calomel, eighty-eight grains; jalap, twenty-four grains; rhubarb, twenty-four grains; and croton oil, sixteen drops, all of which proved totally ineffectual. In the successful treatment of this most fatal and alarming disease, I consider the pump syringe an indispensable implement, because more than double the amount of water can be thrown into the intestine with it than can possibly be introduced with the ordinary syringe. After having distended the bowels to their utmost capacity by warm water and the syringe, then, by the introduction of the acid and soda, you become possessed of another distending power, well nigh incalculable, not sufficient, however, to rupture the intestine, but amply calculated, in my humble opinion, to evercome any stricture or intussusception of this canal. The amount of carbonic acid gas evolved from forty grains of tartaric acid, and an equal portion of carbonate of soda, will occupy about the space of half a gallon, and when this gas evolves, acquires the temperature of the human body (and it should be retained in the intestine long enough for this to be effected), it will inevitably acquire double its bulk at the time of evolution."

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 57.—*On a characteristic of the Urine in Rheumatism and Gout, with special reference to diathetic diagnosis.* By Dr. LAYCOCK, Professor of Medicine, Practical and Clinical, in the University of Edinburgh.

(*Edinburgh Medical Journal*, Aug., 1857.)

"If," says Dr. Laycock, "the urine, in a case of rheumatism or rheumatic gout, be allowed to stand in a glass vessel until it is cool, a mucous cloud will probably appear in it, containing small, opaque, curdy-looking masses. This cloud presents varying appearances under the microscope, according to varying conditions of the patient; but there is one very constant appearance, namely, that of nucleated cells and nuclei or granules, which seem to constitute, in fact, the small opaque masses just mentioned. I have observed these to occur so frequently in certain kinds of cases, that I have been led to consider them as characteristic of the urine in a rheumatic or gouty rheumatic condition of the system."

The microscopic characters of this mucous cloud are of three kinds:

1. The principal characteristics observed are nucleated cells containing nuclei, varying in number, but when treated with ascetic acid, presenting from two to four nuclei. They resemble the epithelium cells of the convoluted tubuli uriniferi.

2. Rounded masses of granules or nuclei, varying in appearance from an apparent agglomeration of nuclei to an imperfectly defined cell with many granules.

3. Free nuclei or granules.

These three products constitute almost exclusively the granular, small, curd-like masses which float here and there in the mucous cloud. Besides these, there are found in the cloudy deposit, in a greater or less number, epithelium cells from the bladder and urethra, and in women from the vagina, with (probably) their nuclei, and occasionally spermatozoa. Of course the urinary salts, especially amorphous masses of urates, are also to be found.

The same characteristic cloud, and the same characteristic cell and nuclei, Dr. Laycock says, were noticed in every *diathetically* rheumatic or arthritic patient admitted into the clinical wards of the Royal Edinburgh Infirmary during a three months period of observation, and he relates the cases, in number eleven. After this he proceeds as follows:

"I do not propose to enter into any speculations as to the origin and nature of the urinary cell-deposit, which I have described in this paper as being so frequently associated with the diathetic disorders known as rheumatic and gouty affections. The most obvious, and, I think, the most probable theory is, that they are the epithelium-cells and nuclei of the convoluted tubuli uriniferi, given off rapidly and

unhealthily, intermingled with similar products from the calyxes, pelvis, and ureters. In other words, it is desquamation of these secreting surfaces, and probably will be found to usher in Bright's disease. Mr. Lowe, of Gainsborough, one of my clinical clerks, to whom I am much indebted for the attention he has paid to this matter, has examined the convoluted tubuli uriniferi of a sheep's kidney, and found similar cells and nuclei or granules. He is also of opinion that the nuclei may be the result of transformation of the epithelium cells from the bladder and ureter, and has figured a theoretical explanation of their formation. The main point is, that they occur with sufficient frequency in the urine of patients affected with acute or sub-acute inflammation of a diathetic character, so as to render them of clinical importance in that class of obscure cases in which the diathetic constitution is not easily determined. They may thus partly constitute a clue to the proper constitutional treatment of various constitutional diseases. It cannot be supposed that such an appearance of the urine, or such microscopic characters, have not been noticed by numerous observers; what I wish to impress upon the clinical observer is, their production in connection with a class of diathetic states, and of diseases associated with those states, as predisposing and determining causes. They have been noticed (as Dr. W. T. Gairdner remarked at the meeting of the Edinburgh Medical and Chirurgical Society, at which an abstract of this communication was read) in individuals who have had gonorrhœa long after all traces of the primary urethritis have disappeared. A remark of this kind cannot apply, however, to the case of the little girl with erythema nodosum. In all instances of that character (and some such have been detailed) the gonorrhœal inflammation should be looked upon as one of those locally exciting causes which, when they act upon the kidneys of persons diathetically disposed to gout and rheumatism, constitute remote causes of an attack. There is a large number of such locally exciting causes of imperfect renal action, and much of the success to be had in treating cases of gout depends upon a quick perception and a full appreciation of them. They may reach the kidneys through the nervous system, as when functional activity of the ovaria and testes affects their secreting function—as occurs in sexual excesses of the gouty man, and in ovarian hysteria, menstruation, etc., in the gouty woman; or through the blood, as when things to be eliminated from it are directed to the kidneys—as in drinking excesses of the gouty man; or when repelled cutaneous excreta are thrown upon the kidneys—as in "taking cold;" or when acrid irritants seek that outlet; or through a more manifestly local action, as from hard riding, damp, cold to the loins, gonorrhœa, &c. All these, and many similar circumstances, may occur without inducing diathetic diseases in persons not diathetically predisposed thereto, and there may be also a correspondent morbid condition of the urinary organs with its characteristic urinary phenomena; yet the fact should not invalidate the practical value of that diathetic diagnosis, which observations of the urine of diathetically predisposed patients may help to establish.

"I am satisfied, from considerable observation and experience, that in this direction of inquiry will be found the solution of many puz-

zling problems in the pathology and the treatment of disease. Once let it be granted (as it must be ultimately) that, in the rheumatic and gouty diatheses, the serous and sero-fibrous tissues are the seat of specific irritation, and where can we stop in the application of the principle? It is as applicable to numerous constitutional cutaneous diseases of a puzzling character, involving the sudoripirous glands and the connective tissue in which they are embedded, as to the well known and universally recognised diathetic affections of the joints. Urticaria, erythema in various forms, herpes, lichen, psoriasis, prurigo, are all often arthritic in their nature, and thus really analogous to various forms of masked and protean gout and rheumatism involving internal organs. It was long before the connection between articular rheumatism and pericarditis was discovered and admitted; but why should we not include other organs having a structure like the pericardium in the generalisation? During the last winter I have taught that acute purpura, as it occurs in the robust and healthy, is in truth a diathetic disease, inasmuch as it occurs in persons of the rheumatic or gouty diathesis—often, indeed, ending in, or preceded by, articular rheumatism; and I have advanced reasons for the theory that the seat of the disease is in the fibrous coat and trabeculæ of the spleen—structures radically identical in their minute structure with the vascular tissues, especially of the heart and large vessels. In like manner, we may have diathetic arteritis (of which I have met with remarkable examples in practice) as well as diathetic endocarditis; nor should we exclude from the generalisation tissues like the capsule of Glisson, the connective tissue and capsule of the kidney, the dura mater, both cerebral and spinal, the investing sheath of the great nerves, and of the canals along which they pass, and the like. As to all these tissues and organs, the experienced practitioner recognises diathetic forms of disease often of a highly painful or dangerous character. Diathetic Bright's disease, gouty neuritis (the most common form of which is diathetic sciatica), gouty inflammation of the spinal meninges, leading to intense neuralgia and hopeless paraplegia, and gouty inflammation of the dura mater and the arachnoid with its serious consequences, may be mentioned as illustrative of this doctrine.

"It is, then, mainly with the view of helping to lay the foundations of an exact diathetic pathology that I have brought these observations before the profession, being satisfied that such a pathology will lead to generalisations of the greatest value both to pathological research and the prevention and cure of disease. And I do this the more unreservedly, because these doctrines and this kind of research have been almost wholly neglected of late years, and because, in fact, the inductive method has never yet been applied to diathetic pathology and practice as has been done in other departments of practical medicine."

ART. 58.—*On the relations of Bright's Disease and Heart Disase.* By Dr. BAMBERGER, Professor of Medicine, Würzburg.

(*Archiv f. Pathol. Anat. u. Phys.*, xi, 1, 1857; and *Medico-Chir. Review*, Oct., 1857.)

The well-known frequency* of the complication of Bright's disease and valvular disease has been differently accounted for by different authors. An essential question regarding the etiology of the two classes of affections is, which of them precedes the other? Professor Bamberger states that, with the exception of a small number of cases in which, during the course of Bright's disease, endocarditis took place, he has never seen a case in which the renal affection was the first; whereas he has observed many in which morbus Brightii was developed during the existence of valvular disease. He therefore concludes that valvular disease is a frequent cause of Bright's disease, but admits that the latter, under these circumstances, frequently does not pass beyond the first stages.

The author next considers the relation of hypertrophy of the heart, unaccompanied by valvular affections, to Bright's disease. The ratio appears to be above 20 per cent. of the former; Dr. Bright himself estimated the frequency of cardiac hypertrophy at 23 per cent. Dr. Bamberger is of opinion that the mechanical explanation ordinarily offered, according to which the hypertrophy is produced by the physical influence of the derangement in the circulating fluid, is untenable. He admits that hypertrophy of the heart, in the majority of instances, is secondary to the renal affection; but he shows that it is found with large kidneys and contracted kidneys, and argues that a very different effect upon the momentum of the aortic current must be produced by each of these forms of renal disease. The Professor remarks, that if the obliteration of some renal capillaries could exert so palpable an influence upon the heart as that observed to accompany many cases of contracted and granular kidneys, the obliteration or application of a ligature to any larger artery ought to produce the same result. He points out that granular liver is analogous to granular kidney, and yet is not productive of cardiac hypertrophy.

In order to arrive at a solution of the question as to the efficient cause of the cardiac hypertrophy in these cases, he carefully tabulates and analyses 48 cases of Bright's diseases observed by himself during life, in which post-mortem examinations were made. In these 48 cases there were 25 in which there were marked alteration in the heart; in 15 there was either recent, or traces of former, pericarditis; in 10, fatty degeration; in 4, degeneration of the aorta; in 3, the remains of endocarditis. Hypertrophy and dilatation of one or more cardiac divisions were met with 19 times. In 28 cases there was serious disease in the lungs; 11 times tubercle, 10 times pneumonia, pleurisy 9 times, emphysema 3 times; the spleen was enlarged in 24

* Willigk ('Prager Vierteljahrsschrift,' Band xxxviii, p. 44) shows that in 209 cases of Bright's disease, valvular disease was present in 31, or about 15 per cent. See also Chambers, 'Decennium Pathologicum,' who establishes a much higher ratio.

cases; the liver was cirrhosed 3 times, in a state of adipose or bacony enlargement 16 times.

It is manifest that serious derangement occurs in most of the vital organs as a complication of Bright's disease. The author concludes that the hypertrophy of the heart is therefore not explicable on purely physical grounds; but that it must be regarded as a purely "vital phenomenon," belonging to the same category as so many other derangements of nutrition which are developed in the course of Bright's disease.

Art. 59.—*Two cases of Bright's Disease terminating favorably.* By Professor Naumann, of Bonn.

(*Deutsche Klinik*, 14, 15, 1857; and *Schmidt's Jahrb.*, vol. xciv, No. 6, 1857.)

These cases are not related by Professor Naumann, but they are taken from a report of the hospital practice of that gentleman. Whether they are cases of Bright's disease, terminating favorably, may perhaps be doubted by persons of a sceptical disposition, but such evidence as we find in Schmidt's Jahrbucher we give.

Case 1.—A dissipated woman, æt. 56, enjoying comparatively good health up to August, 1856, began to suffer from a general sense of faintness and debility, sweating easily, without appetite, having pain in both lumbar regions, which pain was increased by motion and pressure, and passing a small quantity of turbid urine. In the beginning of October, the breathing was somewhat hampered, and the feet had begun to swell. October 27th. The swelling in the feet more marked, and now accompanied by considerable œdema of the scrotum and effusion in the peritoneal cavity. The skin generally puffy, faded, and dry. The lumbar pain more marked. Thirst troublesome; urine scanty, and containing, in considerable quantity, albumen, fatty matter, and epithelial tubes and cells. Exposure to cold and intemperance were the assigned causes of this mischief.

Digitalis and cream of tartar were given internally, with fomentations to the scrotum, and under this treatment, and occasional purging, the dropsical symptoms subsided in a very remarkable manner. Then, an infusion of *Conicera brachypoda* was tried, with the effect of producing marked diuresis, but not of diminishing the abnormal contents of the urine. In November, the œdema returned, extending to the upper extremities, when the patient becoming comatose, recourse was again had to diuretics—at this time to a vinous infusion of the tops of wormwood, juniper berries, and certain bitters. On the day following, the symptoms were all ameliorated, and in four days the patient was able to stand up and move about. Two months later, under a continuance of the same treatment, the dropsy had disappeared, and the albumen and other abnormal elements had vanished from the urine; and three months later still, this amendment still continued.

Case 2.—A letter-carrier, formerly a goldsmith, æt. 41, became dropsical without any premonitory symptoms, and without obvious cause.

November 11th, 1856.—The whole body more or less œdematous; appetite and sleep good; no pain; urine scanty and turbid; skin very dry, heart and lungs sound; considerable effusion in the peritoneum; urine highly albuminous, but without casts. The appearance of the man was anæmic, and on this

account iron was given along with the *Conicera brachypoda*, together with purgatives, and hot-air baths.

27th.—Dropsical symptoms greatly reduced, and very little albumen in the urine. With the exception of the anæmia, the patient seemed to be well.

28th.—Symptoms of acute Bright's disease have suddenly made their appearance—affection of the head, loss of appetite, continuous pain over the kidneys, and urine loaded with albumen, blood, and casts.

This condition was combated by nutrient measures, and in fourteen days the symptoms had disappeared, and, with the exception of a few casts, and a trifling amount of albumen in the urine, the patient was well. In March, 1857, this amendment continued.

Art. 60.—*Diabetic Sugar* not *the same as the sugar produced in the Liver in Health.* By Dr. Owen Rees, Physician to Guy's Hospital.

(*Lancet*, May 30, 1857.)

In one of the Croonian lectures recently delivered before the Royal College of Physicians of London, we meet with the following important remarks upon the peculiar sugar of diabetes, and the causes at work in its formation. "It is not my intention," says Dr. Rees, "to enter upon the etiology of diabetes mellitus further than to remind you that the views of M. Bernard have shown that the liver, contributing as it does, to the formation of sugar in the normal state of the organism, may be regarded, under certain diseased conditions, as the producer of the diabetic state. That in point of fact, according to Bernard, we have not now to determine how a substance, foreign to the healthy constitution of the blood, becomes engendered in the system, but merely to inquire into the causes producing, on the one hand, an over-activity in the sugar-forming action of the liver, or, on the other, the diminution of the destructive power apparently possessed by the blood in health over that sugar when it has mingled with the circulating fluid.

"Now all this is clear enough, were the sugar secreted by the liver, and that produced by injuring the base of the fourth ventricle, identical with that existing in the urine of true diabetes. This, however, is not the case, and we are not, therefore, so nearly about to unravel the difficulty as we might at first be inclined to believe.

"About two years ago I took the opportunity of obtaining blood from the hepatic veins of a dog, in order to determine the presence of sugar; for, like many others, I was at first a little incredulous. By the assistance of my friend, Mr. Hilton, this was effected without much difficulty.

"On examining the blood obtained in this way, I found, it is true, that it yielded me sugar: but there was a peculiarity in the reaction of the tests, which led me to suspect I was not dealing with the same sugar as that contained in the urine of diabetes. It was quite impossible for me at the time to undertake a chemical investigation of the subject, and I was not sufficiently satisfied with my results to venture on publication. Some months ago I mentioned my suspicions to my friend, Dr. Pavy, who has thrown much light on this interesting

subject, and he told me that the same doubt had occurred to him some time since, and he immediately showed me from his note-books that he had worked the question out very satisfactorily, though he had not published on the point. Having Dr. Pavy's permission to do so, I will now detail the results of his investigations. It appears that the principal points of difference between these sugars consists in the greater facility possessed by the hepatic sugar, and by the sugar of *artificial* diabetes, of undergoing destruction by contact with animal tissue. This has been shown by an experiment made on the sugar of *artificial* diabetes, comparing the result with that obtained by similarly treating grape sugar and *true* diabetic sugar. The experiments were conducted as follows: Three vessels were taken. In the first, a quantity of pounded liver, obtained from a healthy dog, was placed with a solution of the urine of artificial diabetes; the specific gravity of the solution was 1045. In the second vessel was placed pounded liver with a solution of common grape sugar, of specific gravity 1040. In the third was placed pounded liver with a solution of extract of true diabetic urine, of specific gravity 1040. The pounded liver was used (as any other animal matter might have been) merely to induce changes in the elements of these saccharine principles by its presence. The three mixtures were now set aside for nine days. At the end of that time, on submitting them to examination by Barreswill's solution, it was found that the artificial diabetic sugar had entirely disappeared, while the reactions were obtained in all their completeness from the two other solutions. Experiments made with the same solutions, substituting blood for pounded liver, led to the same results, showing a power of resisting decomposition on the part of grape sugar and *true* diabetic sugar, far exceeding that existing in sugar obtained by the production of diabetes artificially.

There seems little doubt that the sugar of diabetes is a higher quality of the principle, and that it can preserve its atomic arrangement with far greater force than the hepatic variety. A power, however, seems to reside in the blood, which after *some length of time* eventually destroys, not only hepatic sugar and that of diabetes artificially produced, but even that of true diabetes mellitus. Thus Dr. Pavy's experiments show that if the blood taken from a diabetic be allowed to coagulate, and the serum then be separated from the crassamentum, we can detect scarcely any evidence from the latter after a very long exposure. In the serum, however, it can be detected in quantity till decomposition is thoroughly set in. For some considerable time both crassamentum and serum give full evidence, however, which contrasts strongly with the reaction of blood taken fresh from the right ventricle in health, and which contains *hepatic* sugar, for here the sugar disappears almost immediately the separation into serum and clot is completed. It is almost certain that when we produce the artificial diabetic state by operation, we obtain in the urine the hepatic sugar of the liver. It is also proved that this sugar of *artificial* diabetes is not the same as the sugar of *true* diabetes.

"Now, of course, were these sugars identical, we might consider true saccharine diabetes as a disease in which the sugar-forming property of the liver became abnormally active; or, on the other hand, a

disease in which normal sugar was formed in the liver in usual quantity, but that the blood had lost the power of destroying it when so formed, and that it therefore appeared in the urine.

"The results I have detailed place us, however, in a very different position. We know now that true diabetic sugar is destructible only with great difficulty, and that it is not the same as ordinary hepatic sugar. The question will then arise—Are we to regard the sugar of diabetic urine as a modification of that poured into the blood by the hepatic veins in health, or, on the other hand, as a product of disease bearing no relation whatever to the sugar of the liver?

"To those who have studied the subject of sugar in its chemical relations, who are acquainted with its varieties and the facility with which these are convertible into each other by the most simple processes, there will be no difficulty in believing that the sugar of diabetes may be easily derived from that produced in the liver in health. Late experimenters on the sugars obtained from the vegetable kingdom have shown how easily transmutations are thus effected, and chemical properties developed or abstracted by simple contact with materials apparently possessing anything but chemical activity. No one can fail to be struck, for instance, with the curious fact, that the sugar contained in fruits possesses a certain action on light, influencing polarization, which action is precisely reversed in the sugar obtained *by crystallization* from the very same source. Thus the gummy kind of sugar obtained from grapes possesses the property of *left-handed* circular polarization; but if we allow this sugar to lie exposed, a kind of imperfect crystallization occurs throughout the mass; and if we collect the granular crystals so formed, we find we have in these a sugar differing materially from that originally extracted from the fruit. Its chemical constitution is not the same. Its constitution is $C_{12}\,H_{14}\,O_{14}$, instead of $C_{12}\,H_{12}\,O_{12}$; and when examined optically, it is found to possess the property of *right-handed* circular polarization. The change appears to be effected here by some constituent of the vegetable juice exercising its influence as crystallization goes on; probably the acids play an important part. Now the liver, owing to some diseased action, may be supposed, in diabetes, to produce a sugar differing from that of health; a sugar which cannot be destroyed by the changes taking place naturally in the blood—changes rapidly affecting and destroying healthy hepatic sugar.

"The phenomena of diabetes mellitus are, then, not quite so simple as the experiments and discoveries of Bernard would at a first view make them appear; and we have yet to determine the causes in action for the formation of this abnormal sugar. Does the presence of a different ferment interfere, even as we observe catalysis productive of varying results out of the body; may not an analogous action be going on in the liver? and if so, what may be the nature of the ferment productive of disease, and whence is it derived? Are we to look to the portal blood for the ferment or controlling influence which forms this less destructible sugar? And is it owing to this diseased state of blood that the liver, even though unaffected, is unable to cause the changes occurring in health?

"But we need not have recourse to the theory of a ferment. The

portal blood may present such principles to the liver as are only convertible into the *true diabetic sugar*. So far as we can yet determine, then, the whole phenomena of diabetic disease may eventually be traced to an abnormal state of the bile, gastric juice, and pancreatic secretion, any one or all of which may interfere with the formation of healthy products in the portal blood, and so overpower a healthy liver in the discharge of its office. Analogy would certainly, however, rather direct us to conclude that in diabetes the function of the liver becomes altered under the influence of some cause as yet unknown. Bernard has proved that the organ in health has a very strong transformative action on grape sugar; and so powerful is this, that we should almost be entitled to conclude, even in the event of the portal blood bringing diabetic sugar ready prepared into the hepatic circulation, that it would be metamorphosed by the liver into normal *hepatic* sugar before it could reach the cava through the hepatic veins.

"These results, then, taken together, render it probable that we are to look for the cause of diabetes mellitus in a disturbed state of the hepatic function, not in an increase of *natural* action, but in an action varying in *kind*. We see that in health the liver would reduce proximate animal principles to a normal hepatic sugar, and in the perversion of force occurring in diabetes mellitus, we have a product given us approaching in character, it is true, to the normal sugar, but by no means identical with it. There is great facility for theorizing with respect to the agencies in operation in effecting this change of action. As vegetable juices contain principles which, by simple contact, can alter the chemical and optical qualities of the sugar first generated in the fruit, how easy to believe that the elaborate fluids contained in the several parts of the circulatory system of the liver may do the same. We know that acids are active in the vegetable kingdom; we know that the liver-substance is acid;—may not an over acid state cause the production of this abnormal sugar? or may not even a too slow circulation through the organ (by allowing too long contact with acid matter) bring about disease? These are questions requiring much consideration."

Art. 61.—*On moveable Kidneys.* By Prof. Oppolzer.

(*Wien Wochenschrift*, Bd. 42, 1856; and *Med. Times and Gazette*, June 6, 1857.)

The knowledge of the possibility of the existence of this affection is of importance to the practitioner, as without it he may suppose the appearances observed to result from various other causes, and submit the patient to an injurious course of treatment, or give rise to unnecessary alarm on his part. The abnormal movability usually affects but one kidney, and especially the right one; but the author has met with cases in which it was observable in both, and that in a remarkable degree. In all the cases he had the opportunity of examining, the patients dying of some other disease, the kidneys were found healthy; but in these cases there has been observable a deficiency in the cushion of fat, and an extension of the renal vessels. In some cases the practitioner's attention has been drawn to the abnormality by the patient

observing a tumour on one or both sides of the abdomen, which only became perceptible while standing, or lying on one or the other side, disappearing again during the horizontal posture. Generally speaking, however, it is first discovered by careful exploration, when, beneath the relaxed, painless, and not very obese abdominal parietes, a largish, rounded tumour is perceived deep under the liver or stomach. The inner concave side can only be felt in very thin persons, and the upper end is only accessible in some. The tumour can easily be pushed upwards, and then may suddenly disappear, but it cannot be pressed against the spinal column, or downwards below the crista ilii, without great pain being produced. To very firm pressure, made in any direction, the tumour is sensible; and the patient spontaneously complains of a sense of pressure and dragging, especially when standing, performing active movements, during defecation, &c. In the cases seen by the author, the condition of the urine has been normal.

The affection is usually congenital, as is shown by the lengthened condition of the vessels. Rapid emaciation occurring in persons formerly fat, concussion of the body, as in rough travelling, constipation, &c., may probably contribute to its production. In fat persons the diagnosis may be impossible, but it is not difficult in those who are thin, as the form of the swelling can be traced, while the tumour can be pushed into the lumbar region, and there felt. The pain which it not unfrequently gives rise to cannot be mistaken for neuralgia, colic, or rheumatism, if the practitioner will only make an exact exploration; while the tumour resulting from a collection of the fæces assumes another form, and does not appear in, or disappear from the lumbar region in consequence of pressure. It may also be distinguished from a moveable spleen, as the latter lies in front of the intestines under the parietes, and gives rise to dulness on percussion, which the kidney does not. It can only be confounded with cancerous and tubercular masses, when these are moveable, and resemble the kidney in form. Treatment of this affection by bandages, and the like, is of no avail; and the removal of pain when present must chiefly be sought from the horizontal posture. Confinement of the bowels, and the consequent straining, must be avoided. It is, however, of great importance to be able to tranquillise the mind of the patient as to the nature of the affection, and to prevent injurious measures being adopted; and hence the value of a correct diagnosis.

(F) CONCERNING THE CUTANEOUS SYSTEM.

ART. 62.—*Case of bronzed Skin and Cirrhosis of the Liver.* By Dr. CHARLES FRICKE, of Baltimore.

(*North American Medico-Chirurgical Review*, July, 1857.)

CASE.—Michael B—, white, born in Ireland, æt. 25, five feet five inches high, moderately fleshy, and whose previous occupation was a labourer in one of the lower counties of the State, was admitted to the prison in April, 1856.

He admitted that he drank occasionally, but denied being intemperate, and his health, excepting occasional attacks of malarious fever, had been good. Nothing particular was remarked about his appearance, but his hands. These were fully one third larger than usual, evidently from hypertrophy of the skin, which, along with the fingers, was disposed somewhat in folds, and which appearance I concluded to be due to elephantiasis. He was put to medium work, and attracted no attention from me, until the 1st of September following. I found then that he had failed in strength; that he complained of nausea, and distension about the epigastric region, the latter due to gas; more or less headache and constipation, but no fever. A few days' rest served in a measure to relieve this condition, and he returned to work. At the end of the month he again entered the hospital with the same symptoms, but accompanied with jaundice and a sense of weight rather than pain over the liver. He was ordered taraxicum and blue mass, and in a few days was again relieved. This recurred from time to time until the middle of December, when he became a permanent inmate of the hospital. The jaundice was now universal; pulse 80, and of ordinary volume; no perceptible enlargement of liver; lungs and heart sound; digestive function good; emaciation moderate; and urine high-coloured. His principal complaint was of lassitude and an uneasy sensation in the head. As the case progressed, the principal phenomena exhibited were dropsy, hæmorrhage, black urine, and bronzed skin. The first of these, dropsy, appeared in the form of ascites, about the middle of February, and had attained a very considerable size at the time of his death, but the abdominal veins were never much enlarged; and during the last few weeks, his legs became œdematous. The first hæmorrhage occurred on the 14th of April, from the intestinal canal, as well as from the lungs and stomach. The whole amounted to nearly a quart. These recurred three or four times during the succeeding two weeks. I first remarked the black urine in March. It continued till his death. The average amount was thirty ounces, and sp. gr. 1·020. By direct light this fluid resembled bile, but by transmitted light, was of a deep purple hue. It contained no very great excess of bile, and the change was found to be due to an enormous amount of the colouring matter, termed by Heller *urrhodin*. The fecal discharges for the last six months were hard, rounded, and white balls, somewhat resembling that of dogs.

The bronzed skin, the most interesting phenomenon, and the one to which I wish to direct attention more particularly, was first remarked in January. At the commencement it was not well defined, nor more decided than is often observed in cases of cirrhosed liver, but after a time the tinge became so deep as to attract decided attention. It was limited to the forehead, face, and neck, and almost as deep in hue as is formed in the livers of remittent fever patients. One fact is worthy of notice. The demarcation between this colour and that of the rest of the body was not clearly defined, but they merged into each other by degrees. He died April 29, 1857, after a convulsion.

The autopsy was made by Dr. Johnston and myself, seven hours after death. Bronze hue not so well marked; jaundice universal and of a deep lemon tint; emaciation moderate; and legs œdematous. Head and chest not examined. The abdominal cavity contained about one gallon of serous fluid, and the intestinal canal was filled with dark liquid blood. Kidneys congested and somewhat enlarged, otherwise healthy. Suprarenal capsules of normal size, hue, and consistence; no alteration whatever observable. The liver, one third smaller than usual, was of a bronze hue externally. Everywhere its surface was irregular, and in some places nodulated, particularly the left lobe. Internally the fibrous texture was abnormally developed, and the outlines of the

lobules clearly defined. The cut surface, but not the exterior of the organ, was uniformly of a light apple or pea-green colour. Under the microscope, nothing was perceptible but the hypertrophied fibrous tissue and the cells filled with the same colouring matter. The gall-bladder contained about half an ounce of light green bile. Although various shades are spoken of by different pathologists, I can find in no work this peculiar colour of the liver alluded to.

ART. 63.—*On the diagnosis of the Scabies by the presence of the Ova of the Acarus amongst the scales of the Epidermis.* By Dr. GULL, Assistant-Physician to Guy's Hospital.

(*Lancet*, July 4, 1857.)

Scabies often presents such difficulties in diagnosis by the eye only, that every additional microscopic aid is valuable. It is admitted not to be always an easy task to find the acarus itself; but each animal (female) lays many ova, which are readily found attached to the roughened and undermined cuticle in the neighbourhood of the vesicles. These ova are well known, but their presence as a diagnostic test of itch has been overlooked; they are about $\frac{1}{600}$ of an inch in their long diameter, and in many instances the fœtal acarus can be seen within the shell.

Ova of Acarus Scabici $\frac{1}{600}$ of an inch in long diameter.

ART. 64.—*Contributions to the theory of Epiphytes.* By Dr. EDWARD KOCH, of Würzburg.

(*Virchow's Archiv*, Bd. x, 1856; and *Dublin Quarterly Journal of Medicine*, May, 1857.)

"It was pardonable that investigators who had never succeeded in discovering fungi in mentagra should deny their occurrence or their pathognomonic signification in this disease; it is, on the other hand, surprising that the fungus in favus should at the present day be considered as an *accidental* product of albuminous transudations (Didot), and, accordingly, as unessential to that affection.

"The general condition necessary to the growth of fungi on the human body is their transference from without to such parts as present the conditions essential to their development. Gudden has very well

described the circumstances favorable to the growth of fungi on the integuments; but he has, it seems to me, omitted a very important element in the causation of the origin and spread of pityriasis versicolor, namely, morbidly increased secretion of the perspiration, coexisting with a neglected state of the skin. That this cause of the development of pityriasis is very active with respect to the fungi on which it depends, is evident, first of all, from its frequent occurrence in phthisical subjects convalescent from typhus, and, in general, in patients affected with permanently or temporarily increased cutaneous secretion, in whom either from carelessness or from caution, bathing or washing of the skin is omitted.

"Thus Dr. Koch remembers some patients of this description who were covered literally from head to foot with scales of pityriasis, but in whom he, unfortunately, did not employ microscopic examination, and can therefore not answer for the existence of fungi in their cases, nor can he insist on the existence of the latter in *all* cases of pityriasis after typhus, as he has convinced himself of their presence in only five or six such convalescents. The parts of the body most liable to circumscribed pityriasis might be adduced as a further confirmation of this view. Thus, it is particularly apt to attack the trunk, which is much more easily and frequently the seat of increased perspiration than the extremities; and if we examine more closely, we shall find that the parts most inclined to perspiration, from the neck down to between the scapulæ, the spaces above and beneath the clavicle, the axillæ, particularly the parts about their anterior portion, are most frequently and intensely attacked. In the latter situation, as well as between the breasts, he has very frequently observed it in women. He cannot give a general assent to Gudden's statement, that pityriasis versicolor in particular is of so very rare occurrence in women. This opinion may have arisen from the greater reluctance of women, for many reasons, to consult the practitioner for a few such spots, and also from the less chance of the accidental discovery in them, during medical examinations of other kinds, of the existence of such an affection, in consequence of their unwillingness, without absolute necessity, to expose the parts just mentioned. But if the physician is more frequently compelled to make such examinations in an hospital for syphilitic or cutaneous affection in the female, he will very soon be convinced that pityriasis occurs perhaps as frequently in women as in men. In children, on the contrary, it is certainly very rare; in the latter, profuse perspiration occurs less frequently, and more attention is generally paid by adults to the cleanliness of their skin, than grown people are wont to bestow upon themselves. Gudden further quotes the case of a man who was in the habit of leaving his chest exposed, and in whom the middle part of it remained free from pityriasis, certainly only because it was less liable to profuse perspiration, and because the latter was immediately dried by the access of air.

"In pityriasis the fungi grow chiefly in the external horny layers of epidermis; in favus, on the contrary, they are developed in the hair follicles, where they increase to form great scabby conglomerate masses, the so-called individual favi (*Favus-Individuen*). Leaving out of consideration that we have here to do with two different species of

fungus, a strict separation of the two forms, as essentially distinct affections of the skin, is certainly justified even by the external microscopic phenomena. For the same reasons, as little can identity be maintained between favus and herpes tonsurans, or between pityriasis and the mentagraphyt described by Gruby.

"Thus, in herpes tonsurans, the fungus is situated almost exclusively in the hairs and in their fibrous substance; at least, Dr. Koch was enabled, in almost all the hairs he examined, to establish the freedom of the medullary substance from the affection. In the fine whitish scales of epidermis surrounding the diseased hairs, he has, on the closest examination, but very rarely found some few sporules, but never could discover such great masses as Hebra and Bärensprung mention. These small quantities of sporules must have been derived from the bursting and breaking of the hairs filled with them into the adjoining layers of epidermis. But even should Bärensprung's assumption be correct, that the growth of the fungi begins in the epidermis, and finds its way thence into the hairs, it is still in the hairs that the process, in this form, is to be considered as predominant and essential. If, on the other hand, in favus, hairs are found, here and there, containing fungi, this is certainly so rare as to be considered an incidental occurrence; while, in this case, the formation of the scabby fungous convolution around the hairs—whether isolated or confluent is indifferent—is to be considered as characteristic.

"The arrangement of the fungi in the hair, in herpes tonsurans, Dr. Koch has, in general, found to be such as Malmsten and Bärensprung have described. They lie as garland-like, undivided strings of sporules between the fibres of the cortical substance, leaving the medullary portion intact. The hairs are broken off very short, so that, when pulled out, they are only a few lines long; they have a dirty-white colour, and are swollen, thicker than the unaffected hairs, and very brittle.

"Both the upper and under (radical) extremities of these stumps of hair are, in general, splintering and broom-like, and the strings of fungi extend from the middle portion out between the splinters of the two extremities, so that it is hard to determine whether the fungi grow out from the root, or whether—as Bärensprung considers to be possible—they grow, after the fracture of the hair, through the fractured end into the fibrous substance. Dr. Koch would be inclined to look upon the former as the more probable, namely, that the fungus is developed in the root-sheath, and that it penetrates thence into the upper part of the hair. The growing-in of the fungi from the top of the hair would indeed be proved, if Küchenmeister's statement were correct, viz., that, first of all, a round heap of sporules forms in the root of the hair. But he looks upon this as impossible, since, in every diseased hair of the kind, the top breaks off in extraction; besides, it is more than improbable that a growth of fungi could arise in the centre of the root, without transference from without. Opposed to Bärensprung's view, that the fungus reaches the hair also through the upper fractured extremity, and grows thence downwards, it is yet the fact, that such hairs have never been found having their upper end filled with fungi, and their lower part still free therefrom; not to mention that,

were such a process going on, the fungi should be found more abundantly in the epidermis than is really the case.

"Dr. Koch has not as yet had an opportunity of observing the *Microsporon Andonini*. On the other hand, he has, in two cases of mentagra, succeeded in discovering the *Microsporon mentagraphytes*, and on both occasions as a dense layer of little round sporules situated between the roots of the hairs and their sheath, its limits superiorly coinciding exactly with those of the hair follicle. Fungoid filaments he has as yet not seen in this form of disease.

"If we now consider once more the situation of the fungus in the four forms spoken of, viz., Pityriasis, Favus, *Herpes tonsurans*, and Mentagra, we find it to be in Pityriasis in the external layers of epidermis, leaving the hairs and their sheaths free; in favus in the hair follicle, leaving the lower parts of root-sheaths always (Gudden), and the inner part of the hair most frequently, free; in *Herpes tonsurans*, in the fibrous substance of the hair, with but slight implication of the scales of epidermis surrounding the hair; in mentagra, in the inner root-sheath of the hair, leaving the hair, the hair follicle, and the surrounding epidermis, free.

"Did we now assume that some of these forms of disease depend on the same species of fungus, which, however, is not the case, this constant difference of the tissue attacked should warn us to discriminate between the diseases in question. Gudden, on the other hand, correctly maintains that all varieties of favus are formed of one and the same species of fungus, and are only determined by the greater or less reaction of the cutis against the intruder, and by the degree of growth of the latter. This is not true of favus alone; it is equally so of all the forms mentioned. It is accordingly a matter of indifference, with respect to determining the nature of the disease, whether we find the crusts of favus on a dry part of the skin or on one affected with eczema, or meet them bathed in pus, the favus crust is distinctive. It was certainly a useless and superfluous dispute which was carried on, whether *Herpes tonsurans* commences with eczematous or herpetic vesicles, with papillæ or pustules; the *Trichophyton tonsurans* in the hairs is the essential point, and according to the degree and duration of its growth and the sensibility of the skin in the part affected will the case be attended with simple exfoliation of the epidermis, the formation of smaller or lesser vesicles, pustules, or even abscess.

"It is further equally self-evident that, according to the different seat of lodgment of the fungus, the reaction of the skin in each form will in general vary. Thus we find in pityriasis, where it is superficially situated, for the most part no reaction of the skin, and a slight redness only when the process is very intense, or the skin tender. In favus, in which the fungus begins to grow in the hair follicle, a small yellow vesicle first forms around the latter, and soon dries; under the gradually increasing crust the cutis atrophies; if the scabs increase very much, or coalesce to form extensive crusts, the irritation excited is of course greater, and the more so as washing is very much impeded, and consequently superficial suppuration easily takes place under the crusts, though in most cases without considerable swelling of the skin. Wholly isolated crusts of favus may, if the atrophy of

the cutis is once accomplished, exist a long time without any reaction of the surrounding parts. Thus, Dr. Koch once found, on the lower part of the left thigh of a girl suffering from constitutional syphilis, two isolated scabs, of the size of a six-kreuzer piece (equal in size to our penny), of a dirty-yellow colour, round, and smooth on the surface. He at first thought they were the scabs of dried pustules, but they separated, and he was surprised not to see the least redness of the surrounding parts, and the patient asserted that she had had them more than a year. They were convex inferiorly, and the corresponding cutis was atrophied. On the upper surface was a small central, bowl-shaped depression, leading to a fine little aperture perforating the entire crust. Microscopic examination showed them to be crusts of favus. The patient stated that she never had favus on her head.

"Now, in mentagra, where the fungus penetrates to the deepest parts of the root-sheath, leaving the follicle free, we see the cutis first swell, producing node-like tumours, while a continuance of the affection gives rise to burrowing abscesses, with the subsequent formation of crusts. Thus he has, in one case, removed undermined crusts of the size of a half-florin piece, and from two to three lines in thickness, the numerous hair follicles projecting far, bathed in pus, on their under surface. The nature and situation of the fungus are best studied on hair follicles removed in this manner.

"Finally, in the last patient affected with favus whom he had an opportunity of examining, invariably he found in all the scabs peculiar bodies of a light green colour, and for the most part of a regular round shape, about double the size of the sporule cells, and consisting of a membrane in general containing from one to four smaller granules, apparently of a darker shade of green. He does not remember to have seen these bodies mentioned in any description of favus, nor had he himself observed them in his earlier investigation of such scabs; consequently, he cannot pledge himself that they are a constant constituent of the scabs in favus. However, it struck him as remarkable that in this one patient he found them in tolerably large numbers mixed with the fungi, and especially where the filaments were most crowded. In order to guard against the possibility of deception from the accidental conveyance of foreign bodies to the surface of the scabs, he cut several of the latter obliquely through the centre, and shaved off small portions from the innermost part; but in the objects thus obtained, he still found the green globules above described in numbers equally great. He does not venture to draw any conclusion from this observation of a single case; but he is inclined to believe that the chlorophyll bodies in question could not accidentally have got into the scabs."

ART. 65.—*On the existence of Herpes in Domestic Animals, and its communication to Man.* By Dr. VON BARENSPRUNG.

(*Annalen des Charité-Krankenh.*, Achter Jahrg., Heft i; and *Med.-Chir. Review*, July, 1857.)

The author quotes numerous writers who have directed attention to the occurrence in animals of cutaneous eruptions similar to those found in man. Alibert has remarked the occurrence of herpes circinnatus in horses; Dr. Fehr has observed a peculiar herpetic eruption in Switzerland communicated from cattle to human beings; similar observations are quoted from Hering's 'Repertorium der Thierheilkunde,' Band i, 1840; from Gurlt and Hertwig's 'Magazin für die Gesammte Thierheilkunde,' Band vii, 1841; Letenneur's 'Réflexions sur l'Herpès Tonsurant,' 1852; and other works. From his previous investigations into the nature of herpes in man, Dr. Von Bärensprung assumed that the eruption in question was characterised in animals as well, by the formation of a confervoid growth. In them it resembles the herpes tonsurans of man; circular, well-defined spots form, upon which the hairs are partly broken off, partly fallen out, and invested with a white asbestine scurf; the subjacent surface is red, and covered with papulæ. These spots occur in all parts of the body, but especially in those which the animal is unable to reach with its tongue. Each hair is enveloped at its base with a thin whitish sheath, a prolongation of the sheath of the root of the hair, which commonly ceases at the point at which the hair issues from the cutis. This occurrence is due to a cryptogamic vegetation, which glues the sheath to the hair; this consists in sporules and filaments; the former are circular or angular, and without granular contents; the latter are elongated, branched, and jointed. The characters are the same as those found in herpes as contradistinguished from tinea and chloasmi; but the cryptogamæ are found not so much, as in man, in the hairs themselves, as between the hair and the sheath. Dr. Von Bärensprung rubbed some scales containing much of the confervoid growth on his left forearm. For some days no effect was produced, but after a time considerable itching reminded him of the experiment, and to his surprise he found a well-formed spot of herpes circinnatus of the size of a sixpence. This gradually increased, and in three weeks attained to the size of a crown-piece. In the fourth week the first spot began to heal, but others formed in the vicinity, and the author now arrested them by the application of white precipitate ointment.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

(A) CONCERNING TUMOURS.

ART. 66.—*Comparison of the mode of inserting Caustics by Incisions, with other modes of applying caustics in the treatment of cancer.* By the Surgeons of the Middlesex Hospital.

(*Report of the Surgeons of the Middlesex Hospital on Dr. Fell's Mode of Treating Cancer*, Churchill, 12mo, pp. 114, 1857.)

The mode of introducing caustics by incisions, frequently repeated, with a view to effect the gradual destruction of a cancerous growth, would appear to have originated with Dr. Fell, but it is curious to find how, towards the end of the last century, he was anticipated by Mr. Justamond, surgeon to the Westminster Hospital (1780). Thus, in an 'Account of the method pursued in the treatment of Cancers and Scirrhous Disorders, and other indurations,' we find that the practice of this surgeon was to make scarifications in the eschar, and fill them with a caustic application; but at the same time we do not find that this practice was repeated daily for weeks, with a view to the gradual destruction of the cancerous growth. The merit, then, of applying caustics by incision, if it be a merit, must be ascribed to Dr. Fell, and this is his only merit, for the new ingredient of his caustic—*Sanguinaria canadensis*—is evinently no more than a handle for quackery.

"It cannot fail," say the reporters, "to strike those who uninterruptedly watch cases subjected to the mode of applying caustics by incisions, that, in several particulars, their progress and results are all but identical with what is observed in the ordinary employment of caustics. The morbid growth is in both converted into an eschar. That eschar is thrown off by the action of the living parts. The healthy structures appear little prone to resent the caustic applications, however made; and inflammation, abscess, erysipelas, and purulent infection are all but unknown consequences of their use. For like reasons in both methods there is no hæmorrhage. The effect

upon the local cancerous disease, which follows the introduction of the paste by gradual incisions, is in its very varieties precisely that attending the ordinary use of caustics. There has been in some of our cases the same aggravation of disease as followed the caustic treatment of Dr. Landolfi. There has been in others the same beneficial effect upon the secondary disease of glands, which is often seen to follow the removal of a primary tumour by the ordinary use of caustics.

"But there are these differences. The pain attending Dr. Fell's plan is decidedly less. The proportion of the escharotic in his paste is greater than that in other caustics composed of the chloride of zinc, *e. g.*, in Dr. Canquion's preparation. The chloride is mixed with a new ingredient. Lastly, the paste is introduced in a different manner.

"With respect to the comparative *pain*, we may at once state that of the many cases which have been under our care in the past six months, there has not been one in which any of us would have resorted to the ordinary use of caustics for the extirpation of the local disease, so dreadful is the suffering attending their use. By the invention of the method of introducing caustics by gradual incision, a very important advantage is gained: it admits to the benefit of treatment an entirely new class of those who suffer from cancer—a class hitherto almost universally abandoned, at least in England—we mean, patients precluded, by the judgment of the surgeon, or it may be by their own choice, from the use alike of the knife or of ordinary caustics. In the cases now reported on, the majority of the patients were of that class, and in none was the value of the treatment more conspicuous. The average of pain was in these very patients the least; and nothing could be more striking than the contrast between the distressed condition of such patients before they were treated, and their comparative ease afterwards; healing sores or temporary scars taking the place of fetid, tender, discharging, and constantly growing masses of cancer. Every such patient restored to comfort, and with life prolonged, is a witness to the value of this treatment; and we cannot but esteem him happy who could thus suggest and adapt to practice a method by which life and ease are extended to many persons previously without hope of either. That there are still cases so virulent in their malignant character, or so far advanced towards a fatal termination, as to be beyond all help, does not detract from its merit. This plan of treatment is a clear advance upon the past, and may not only be itself improved, but may be the way to more extended blessings upon a class of the community now signally distressed.

"The *time* occupied in the complete extirpation of a tumour by the incisions, is generally longer than when caustics are used in the ordinary way. We are not, however, prepared to say that there is any further disadvantage in this than the mere fact of delay; or that the probability of increasing local cancerous action is greater by the milder and more continuous application of the chloride. The recorded results of the very slow process of treatment peculiar to Mr. Justamond, and of the practice of employing as a caustic Burnett's disinfecting fluid, would incline us to think that there is rather an advan-

tage than a disadvantage, in a very slow destruction of cancerous tumours.

"*Sanguinaria.*—The presence of a new ingredient in this caustic paste would seem to call for an inquiry into its nature and its mode of action in cases of cancer. We have, accordingly, endeavoured to ascertain the value of the sanguinaria, employed alone, as a topical application, and our knowledge of its efficacy is expressed in the following facts:

"Applied in a decoction of the same strength as that used in making the paste, it showed no power whatever of altering the appearance of healing sores on the leg. It neither repressed the granulations, when they were exuberant, nor impeded the formation of those which were healthy. On the contrary, sores granulated and cicatrized under it, as they might have done if treated with water-dressing; and granulations formed, and rose above the level of the edge of the sore, in spite of the alleged power of the root to destroy fungous growths,

"Applied in powder, daily and freely, upon a sore on the leg covered with large granulations, and rising considerably above the surrounding surface, it did not, in a week, at all lower the level of the sore, but the granulations covering it became small and healthy. The patient was a young man, just admitted into the hospital, and was kept in bed during the treatment.

"In Case 50, the effect of the sanguinaria decoction upon cancer was contrasted with that of the chloride of zinc in the same patient, and it was found that the diseased tissues shelved off in somewhat larger flakes, with greater frequency, and with more pain, under the use of the sanguinaria. The two fluids appeared to have equal power in correcting the fetor of the morbid parts.

"Its effect in the case of a very large ulcerated cancer of the breast, to which it was applied in powder for the period of a fortnight, was to destroy the vascularity of the surface of the sore, and change its appearance into that of whitish non-vascular lymph, to diminish considerably the quantity of the discharge, the consequent fetor, and the pain. Upon employing, for ten days subsequently, a lotion of conium and opium, without the sanguinaria powder, the fetor returned, and some of the discharge; but there occurred no appreciable alteration in the character of the ulcerated surface.

"In a case of very large encephaloid tumour, with deeply excavated ulcers, formed on the left os innominatum of a middle-aged female, the decoction of sanguinaria was employed with the effect, not only of diminishing the quantity of discharge, which had previously been profuse, but of removing the offensive odour and cleansing the surface.

"Further than this, we have made no inquiry into the powers of the sanguinaria as a topical remedy. For the purpose of destroying cancers it appears to be practically inert. Such effects as those described would probably be produced by many other woods employed in the form of powder. The metallic is confessedly the efficacious part of the paste; since Dr. Fell himself, finding that 'months of continued application of the sanguinaria were requisite to remove a tumour by its means,' abandoned it as a solitary remedy for that pur-

pose, though he retained it for some specific control which he supposed it to have over cancerous matter and action. It will also be gathered from what we have said, when comparing the action of the paste with that of caustics in general, that we attribute none of the power of the former to an agent so feeble in its action as the sanguinaria.

"*Incisions.*—The last peculiarity of this treatment is the practice of incisions; and we are of opinion that this is its only, but its very great merit. The sanguinaria is inert; the chloride of zinc paste was known before; but the incisions constitute a new feature in the treatment of cancerous tumours, for which we find no parallel in the writings of the past, or in the practice of present surgeons. Cancer, in its constitutional nature, remains as ruthless and as unassailable as ever. Chloride of zinc may, or may not, continue to be used for the destruction of the local disease. But the advantage placed in the hands of surgeons by the invention of gradual incisions, claims henceforth their very frequent adoption in the treatment of cancerous tumours, as well as a grateful acknowledgment of the ingenuity of their inventor."

Art. 67.—*On Cancer Curers.*

By Mr. Spencer Wells, Surgeon to the Samaritan Hospital, &c.

(*Medical Times and Gazette*, July 11, 1857.)

The following remarks are taken from an admirable lecture on the treatment of cancer, which may be read from beginning to end with much advantage by those who wish to acquire sensible ideas on this subject. It is very interesting to see how recent doings have been anticipated, and how even the scoring the eschar, as practised by Dr. Fell, is not altogether a new idea.

"It is curious to remark how imitative even great discoverers may be. The escharotic effects of arsenic had been known to the Greek and Roman physicians—they had not been forgotten in the middle ages. The mineral had been used for centuries in the removal of cancerous diseases. Plunket adds some crow's-foot and dog fennel to it, and becomes a great cancer-curer in London in the early part of last century. The chloride of zinc is proved to be an excellent caustic by Hancke, Canquoin, Alexander Ure, and others. They even use it to remove malignant growths. Dr. Fell adds some *Sanguinaria canadensis* to it, and four gentlemen of the very highest character and professional position, expressing no disapproval of the use of a secret remedy, and without trial of the unaided powers of the vegetable, publish a certificate on Dr. Fell's 'mode of treatment,' complimenting it as 'ingenious, safe, and easy of application.'

"It was Guy's caustic, or rather the Plunket's paste, that killed Lord Bolingbroke, and many others were poisoned by the local use of arsenic; yet this did not prevent Lord Arundel from buying the receipt of the wife of a blacksmith, so ignorant that she could not sign her name, but a noted cancer-curer, named Elizabeth Fellow. This was long known as Lord Arundel's Cancer Cure. It was an arsenical powder, and a wash of corrosive sublimate, and no doubt

killed a great number of poor women. However, like Plunket's paste, a great many cancerous and other tumours were removed entire by it; and Mr. Justamond, who was surgeon to the Westminster Hospital some seventy or eighty years ago, tried them both very extensively, arriving at the conclusion that the advantage gained did not compensate for the risk incurred. It is curious to find how Mr. Justamond anticipated much that has been going on in London during the last three or four years by cancer-curers, and it may be worth while to read to you rather a long extract from a pamphlet he published in 1780, giving an account of his experiments.

"After describing various methods he had used without success, he mentions a case in which he resolved to attempt extirpation by the arsenical caustic. 'My patient was extremely timorous, and would by no means be persuaded to submit to the operation by the knife. She had a very hard stubborn scirrhus in the right breast, just above the nipple, of the size of a small apple, and beyond this, a small indurated gland under the axilla. The arsenical preparation I used in this case was composed of one-third of antimony and two-thirds of white arsenic fused together. This being reduced into impalpable powder, a few grains of it were mixed with as much powdered opium. But as the skin was entire, and as I knew the arsenic would not act through the cuticle, the day before this powder was applied I rubbed the whole surface of the gland gently with the lunar caustic. By this contrivance the cuticle was easily separated next day, when mixing a small quantity of the powder with part of the yelk of an egg, so as to bring it to the consistence of an ointment, I spread this upon a pledget, cut to the size of the gland, and applied it to the whole surface. The pain was very great for the first four-and-twenty hours, but after that subsided. I left this first dressing on for several days, when seeing it ready to drop off, I removed it, and found that all that part of the skin on which the caustic had been applied was cracking all round, and the tumour beginning to separate. In expectation of facilitating this separation, I made a few scarifications on the destroyed surface, and filled the crevices with more of the powder, applying over it a pledget of the same kind as the former. But this second application did not, as I imagine, produce any effect, for it caused no pain. I then waited a few days to observe what would happen. The separation began to take place more evidently at the edges, which now looked florid, though the tumour did not yet seem ready to come away. To hasten this event, I judged it proper to put some of the powder all round the separating edges, and as low down as it could be insinuated between the diseased gland and the sound skin. I soon found that this contrivance had its effect, for the pain it occasioned was more violent than that produced by the first dressing. I was, however, obliged to repeat the application of the powder to different parts of the edges at intervals, but never in so large a quantity as before. By this method the separation of the tumour was effected in little more than two months, and the gland came out as entire as a nut out of a shell, or as if it had been cleanly dissected with a knife. The small gland under the armpit I had put nothing to, thinking it would dissolve by the suppuration of the larger

one, but in this I was mistaken. It still remained, but this circumstance did not prevent the wound made by the separation of the larger gland from healing very fast after it had come out.' Mr. Justamond says he saw this patient a year and a half afterwards in perfect health. He explains the separation of the diseased gland from the surrounding parts by the action of the arsenic on the sound skin when deprived of its cuticle, 'bringing on inflammation and suppuration in the cellular membrane all around and underneath the diseased gland, which is thus forced out entire, and unaffected by the caustic;' and he adds, that if any one wish to separate the whole gland at once, 'he must extend the application all over the indurated part, after having deprived the surrounding skin of its cuticle, either by a blister, or by the method made use of by me in the above instance, which I think preferable, as being less irritating. Perhaps it may hereafter be found only necessary to make a circle round the whole tumour for the application of the arsenical caustic.'

"So you see the modern cancer-curers have not taught us anything new. They have not taught us how to remove cancer by caustics. They have not taught us to discard arsenic. We had done that long ago, except in those cases of small superficial malignant ulceration, in which, in a dilute form, it is still the best remedy known. They have not given us any new caustic, and it remains to be seen whether they can show that their caustics, as prepared and used by themselves, have any advantage over the knife. To settle this question we cannot do better than examine the results of the cases of Landolfi, Pattison, and Fell, as recorded by themselves.

"Landolfi, a Neapolitan physician, may be looked upon as the prince of the cancer-curers. He has been decorated with orders of knighthood by sovereign princes, has been alternately flattered and abused, and has made an immense fortune. He made no secret of his plan. 'Landolfi's paste,' as his caustic was called, was composed of equal parts of the chlorides of zinc, bromine, gold, and antimony, made into a paste with flour or liquorice powder. Sometimes he used the chloride of bromine alone, using it both externally and internally; and when the slough had been formed, he used lettuce poultices till it separated. There can be no doubt that Landolfi removed an immense number of cancerous tumours by his paste in Italy, Germany, and France, and that healthy granulations sprung up, and firm cicatrices very often resulted. He used to assert that out of four thousand cases of cancer he had treated, the disease had not recurred in three thousand. This is what he *said*. He never offered anything like *proof* of the truth of this statement; and when his caustic was tried in the Hospitals of Vienna and Paris the conclusions arrived at were that it was decidedly inferior to the chloride of zinc. Landolfi went himself to Paris, and a number of patients were treated by him in the Salpétrière, under the inspection of a committee of hospital surgeons. Their report was published, and my colleague Dr. Deville, has just favoured me with a copy. The conclusions are, that the chloride of bromine, which is the only peculiarity in Landolfi's treatment, is quite useless as an internal remedy; and that locally it only acts as a blister, raising the epidermis, and exposing the denuded part to the

action of the chlorides of zinc and antimony; acting, you observe, just as the ranunculus did in Plunket's paste, the nitrate of silver as used by Justamond, or like any common blister. The committee reported that the pain produced by this caustic was excessive, and that it did not secure the patients from the danger of erysipelas or hæmorrhage. Landolfi does not appear to have been more successful in Germany than in France. In November, 1853, he was called to the reigning Duchess of Anhalt-Cothen to remove a cancer of the breast. In January, 1854, Dr. Brunn, a member of the Superior Medical Council of the Duchy, published a pamphlet on Landolfi and his method, in which he announced his success as complete; yet on the 13th of July, 1855, the Duchess died of a return of the cancer of which Landolfi had cured her. Other cases treated at Cothen and Munich died or relapsed. He treated Dr. Seyfert at Dresden, and he died. He treated a Prince of Prussia, and was decorated with the order of the Red Eagle; but here again *cure* meant *cicatrization;* for I have been assured that the disease was cancroid of the face, and that it has returned. Dr. Valentini of Berlin tried the method in forty-three cases, and published an article in July, 1854, in its favour, but in July, 1855, only one year later, he wrote to say that it had entirely disappointed him. So at Vienna, in October, 1854, Dr. Weinberger published reports of thirty-three cases treated before him by Landolfi. One of the cases reported as cured relapsed while Dr. Weinberger was correcting his proof; and ten months later he wrote, that in cases of medullary cancer the disease 'always returned, even before the cicatrization of the wound,' and that the internal use of the chloride of bromine had no influence whatever in preventing relapse. Landolfi by ministerial authority *selected* six cases himself at the Vienna Hospital, and treated them under the observation of a committee, yet he only cured one, and that was an innocent tumour, a partial hypertrophy of the mamma, for which he destroyed the whole breast quite unnecessarily, and produced a large unsound cicatrix. He wrote to the French Commission to say that the effects of the application of his caustic in France were in all respects similar to those he had obtained in Germany and Italy; and so we find them. Of nine cases of cancer of the breast treated by Landolfi himself at the Salpétrière two died; in four the disease was aggravated; and in the three in which cicatrization took place the disease reappeared. Not one of the nine was cured. He treated three cases of cancroid, and cured one. In a second the disease reappeared after cicatrization, and in the third it was much aggravated. So much for the three thousand cures of four thousand cases. Well may the French committee add that Landolfi's method 'adds another to the illusions that so abound in the history of cancer.'

"Dr. Pattison, as you may be aware, some three, four, or five years ago, occupied much the same position in London that Dr. Fell does now. Both are physicians with American diplomas, who have professed to cure cancer by secret remedies, who have treated a great many patients, and have published accounts of their treatment. The difference between them is, that Dr. Fell has at length made known the composition of the remedies he employs, while Dr. Pattison has

not; although it is pretty generally believed, and not without ground, that the essential part of his preparations was the dried sulphate of zinc, which Dr. Simpson showed in the 'Medical Times and Gazette' a few months ago was a most useful caustic. Dr. Pattison has not been heard of so much since the arrival of Dr. Fell. Indeed the disappearance of one and the advent of the other are supposed not to have been altogether without concert. Where Dr. Pattison may be now, I cannot say, but his publications remain; and I can tell you something about some of the cases he has treated. A report of one of these used to appear in the form of a declaration sworn before the provost of Glasgow, that the patient was cured by Dr. Pattison, after having been regarded by Mr. Syme, of Edinburgh, as hopeless. Mr. Syme informs me that the patient was a small farmer, who had a sore at the corner of the nose. Mr. Syme applied the chloride of zinc to it, but the man went to Dr. Pattison, and so far from having been cured by him 'died in great misery after several journeys to London.' Mr. Syme informs me that a case of cancer of the breast which had returned after operation, and which Dr. Pattison boasted he had cured, is not cured, but that the lady is dying; and that another lady, upon whom Mr. Syme declined to operate for cancer of the tongue, died under Dr. Pattison's care. These are cases which the public never hear of, but which really ought to be made known. In 1855 a book appeared, entitled 'Cancer; its true Nature, Treatment, and Cure. Illustrated by Cases. By John Pattison, M.D., 31, Lower Grosvenor Street.' Most of these cases are given so indefinitely, as 'Mrs. H—, from Essex;' 'Mrs. J—, æt. 54;' 'Miss ——, æt. 27;' 'Mrs. A—, of Hammersmith;' 'D. C—, from Scotland;' and so on, that it is impossible to find out how far the cures related are correct; but there is a clue to some of the cases, particularly to those treated at Glasgow; and I wrote to Dr. Macleod, a most able surgeon of Glasgow, to ask him to make inquiries about them. Here is his reply:

"'The following is the result of the cases treated by Dr. Pattison in this neighbourhood, of which I have been able to find out the particulars:

"'1. David W—, nursery gardener, &c.—This was a case of cutaneous cancer of the cheek—the sore being about the size of a sixpence. Dr. Laurie applied the actual cautery twice; after which it healed for a short time, and again broke out. Pattison treated him, in 1852, for six weeks, during most of which time he was put to great agony—the caustic being applied, at one time, continuously for eight days. He was pressed to submit to it, in order to see 'whether a caustic which had been so effectual in America, would act in the same way in this country.' The sore healed up after this, and has remained well till lately, when the old lancinating pain has returned, the hardness (which had never left it) has increased, and the inner end of the cicatrix has begun again to ulcerate. The man himself says he is sure he is going to have a return of his disease, and acknowledges that 'the cure' has entirely failed.

"'2. Miss M—, of 28, Parson Street.—It is eight years since she first observed a small pimple on her right cheek, which remained long small and painless. It was hard, but quite superficial. About two years after its first appearance, it broke and 'wept.' It was many times healed by Dr. Ritchie,

by simple means. Having again appeared she put herself, four years ago, under Dr. Pattison's care. It was then 'no larger than a herring scale, and felt, when she bent down, as if it would drop out.' Dr. Laurie had seen her just before this, and had told her to have two decayed teeth drawn. This she did, but hearing immediately afterwards of Dr. Pattison, she did not wait to see the result of Dr. Laurie's recommendation, but put herself at once under the charge of Dr. P., who told her it was lupus. The sore had all along remained quite small and superficial—had not spread, and caused hardly any uneasiness. She was in London, under Dr. P., for seven weeks, and was apparently cured. Caustics were very frequently applied, and she was told that 'a very large bad lump had been took away.' She came down to Glasgow, and in fifteen months afterwards she was as bad as ever. She returned to London, and was seventeen weeks under Pattison, who 'again took away a great mass of disease.' The sore caused by the caustic healed, and there has, up to this time, been no return. The cicatrix on the right cheek is as large as a florin, white and sunk. There is no hardness, or any breach of surface. Dr. Ritchie says that the sore was 'suspicious' when under his care, but he would not have pronounced it 'malignant.' It was very superficial; and the description given by the girl herself, that it was a 'weeping pimple,' seems the best which could be given of it.

"'3. Mr. L—, foreman in a manufactory here, I can hear nothing of.

"'4. Mr. C—, auctioneer, was a case similar to that of David W—. He was twice operated on by Dr. Laurie, and on the reappearance of the disease, fearing another operation, he went to Pattison. He was twice under this gentleman's care—once in 1853 for three weeks, and again in 1855 for two months. The disease, which was very limited, in a great measure, though never completely, disappeared after his first visit to London, but in a few months after it again came back worse than ever. He was at that time put to so much pain, that 'he thought he would have died.' In 1855 he was again treated by Pattison; the disease knew no amendment, and it is now spreading, though slowly, and he is about to submit himself to more legitimate interference. This patient has dissuaded many others from going to Pattison.

"'5. Miss P—, of Glasgow, had been three times operated on with the knife. Had the disease—a cancer of the breast—temporarily removed by Pattison, in 1853. It returned in the spring of 1856, and has now been eight months under Pattison's treatment, where she still remains, 'daily getting worse,' (so say her friends.)

"'6. A sister of this lady's lately died under Pattison's care; but from what I can learn, she was in so advanced a stage of cancer of the tongue when he saw her, that her death by no proceeding could have been long delayed.

"'7. Mr. R—, lupus of the nose, said to have been treated by Mr. Lyon, of Glasgow. Mr. Lyon knows nothing of this case, nor can I hear anything of it.

"'8. Mrs. W—, 'ulcer of the leg, of five years' standing; attended by Dr. Gairdner, of Glasgow, cured by Pattison.'

"'This was a common varicose ulcer of the leg, for which Dr. Gairdner could not persuade the patient to lie up for a day. She put herself under Pattison for some months, in London, and followed all his instructions, of which rest was the chief. She came home well, and remained so for a time. The ulcer again appeared when she became pregnant, and it is again nearly as bad as when she was under Pattison.'

"I am sure, gentlemen, I need not trouble you more with Dr. Pattison's cures. I have made inquiries myself about others, and I have only found *one* in which the cure was permanent, and that was a case of a small superficial sore on the face, possibly malignant, possibly not.

"I do not mean to say much about Dr. Fell. His position is somewhat peculiar; for though he used a secret remedy, he was very open in exhibiting its effects to medical men, and he has lately made known its composition, in compliance with an agreement entered into with the surgeons of the Middlesex Hospital, in a book he has recently published. In his preface he talks of the 'gratitude of a multitude of cured patients;' but, as the treatment of the earliest case he has recorded, as treated in England, was commenced July, 1855, and the lady died with pulmonary complication in the following April, and the other cases are of much later date, it is obviously absurd to talk of *cures*, when only a few months have elapsed after cicatrization. I know of cases in which the disease has returned after removal by Dr. Fell himself, and that in a much shorter period than two years; and, looking upon the essential part of his treatment to be the local use of chloride of zinc, it appears to be most unlikely that the results will differ from those obtained by Canquoin and others by the use of the same caustic. The report of the surgeons of the Middlesex Hospital was drawn up within two months after the treatment was commenced there. I may tell you that Dr. Fell has not published all his formulæ in his book. At the Middlesex Hospital he uses an ointment containing snuff and acetate of copper, and another made by boiling stramonium leaves in lard; but the chloride of zinc is the caustic by which the tumour is destroyed; the sanguinaria and cochineal added to it are probably of nearly equal efficacy, and the after-dressings of comparatively little importance."

ART. 68.—*On the use of Manganate of Potass as a caustic in Cancer.* By Mr. WEEDON COOKE, Surgeon to the Royal Free Hospital and to the Cancer Hospital.

(*Lancet*, Aug. 22, 1857.)

Mr. Weedon Cooke speaks highly of *manganic acid*, in combination with *potassa* as a base, as a caustic in the treatment of cancer. It produces, he says, much less pain than any other caustic, and no ill-consequences of any kind. It is a dark-green powder, which may be dredged on the ulcerated surface by means of a pepper-castor.

ART. 69.—*On the Escharotic treatment of Cancer.* By Professor SYME.

(*Edinburgh Medical Journal*, Nov., 1857.)

After some sour comments upon Dr. Fell's mode of treating cancer, and upon the conduct of the Surgeons of the Middlesex Hospital, in allowing so irregular an experiment to take place under their auspices, Mr. Syme proceeds to state his own opinion upon the escharotic

treatment of cancer, and to offer certain practical rules upon the treatment of cancer generally.

"If," he says, "caustic is ever used for destroying malignant textures, it should, therefore, be of such power and so employed as to strike at once to the root of the evil, and I am able to suggest efficient means for this purpose.

"Mons. Velpeau, in speaking of the caustic made by mixing sulphuric acid with saffron, expresses his persuasion that it would be the best of all escharotics except for its expense and the difficulty of confining its action within certain limits. It occurred to me that sawdust would supply the place of saffron, and my assistants at the hospital ingeniously devised the following effectual means of restraining the extent of action. A solution of gutta percha in chloroform is applied to the skin for some distance round the part to be attacked; then a thick piece of the same material, with an aperture cut in it of the requisite size, and softened by exposure to heat, is pressed firmly so as to adhere everywhere to the surface thus prepared; a thin piece is next glued round the edge of the opening, so that, when supported by a stuffing of lint, it may form a wall enclosing the diseased part. Concentrated sulphuric acid, with about an equal weight of sawdust stirred into it, until the admixture assumes a homogeneous consistence equal to that of thin porridge, is lastly applied, in quantity proportioned to the extent of thickness concerned. In the first instance, as the pain is acute, opiates or chloroform may be used; but after a short while, so little uneasiness is felt, that the patient can easily allow the caustic to remain for ten or twelve hours, when it will be found that the whole diseased mass, though covered with skin and several inches in depth, has been reduced to a cinder, presenting the appearance of strongly compressed tow. Under poultices, the slough separates in the course of days or weeks, according to its depth, and the sore then heals without any trouble. If, therefore, patients, from an unconquerable dread of cutting, should prefer the escharotic treatment, or if the circumstances, on any other account, should seem to render this method eligible, the procedure just described may be found useful.

"In conclusion, I beg to offer the following principles or practical rules for the treatment of cancer:

"1. The treatment of cancer may be divided into curative and palliative.

"2. The curative treatment should not be undertaken when the local disease is so seated or connected as to prevent its complete removal; when the lymphatic glands are affected; and when the patient's general health is deranged.

"3. Removal may be accomplished by means of the knife, escharotics, and ligatures.

"4. Of these means, in general, the knife is best, and ligatures the worst.

"5. Escharotics may be used with most advantage when the disease is superficial.

"6. Escharotics, employed with a curative view, should always destroy the whole morbid part by one application.

"7. The palliative treatment is generally best accomplished by means of soothing applications and attention to the general health.

"8. When the local disease is very troublesome, it may sometimes be relieved for a time by destruction of the morbid growth.

"9. The best agent for this purpose, and also with a curative view, is concentrated sulphuric acid properly applied."

Art. 70.—*On a case of manifold Neuroma, with a remarkable local tendency to relapse.* By Professor Virchow.

(*Virchow's Archiv*, Bd. 12, 1857; and *Dublin Quarterly Journal of Medicine*, Nov., 1857.)

On the 4th of May, 1857, Professor Virchow received from Dr. Schmidt, of Bernberg, some diseased masses with the following account.

"'Enclosed,' says Dr. Schmidt, 'I take the liberty of sending, for your kind examination, some diseased massess, which, early to-day, I extirpated, or, more correctly speaking, enucleated. Their seat was on the lower two-thirds of the flexor side of the forearm. As to the history of these peculiar tumours, it is, in the first place, remarkable, that according to the recollection of the patient, a man of sixty-one years of age, a movable tumour, of the size of a lentil, with natural integumentary coverings, formed thirty-four years ago on the flexor surface of the fore-arm, not far from the wrist-joint. Its growth was so slow that at the end of twenty years the tumour was about the size of a cherry. About five years ago it had attained the circumference of a middle-sized apple. The swelling, which had previously been free from pain, caused some suffering, on which account Professor Blasius, in 1852, extirpated the tumour. The healing of the wound was tedious. In fifteen months, at midsummer, 1853, a tumour formed anew in the same situation, which in the spring of 1854 had far exceeded the size of the first, was uneven, and had become excoriated on the surface, giving rise to bleedings. Professor Blazius, therefore, had recourse again to extirpation, which was very difficult, in consequence of the secondary masses having formed firm attachments to the skin, the tendons, and even the periosteum of the radius. After this operation relapse took place very soon—even in June the new masses were considerable in number and circumference. It was, therefore, necessary this year to have recourse again to extirpation. But scarcely had the wound caused by this operation healed, when the after-products again appeared. The fourth operation was performed by me in October, 1856, when the relation of the tumour to the tendons and periosteum was as before. A portion of the masses could be scooped out with the fingers without the knife.

"'The fifth operation was, as has been mentioned, performed to-day. The masses were again seated partly in the areolar tissue, partly among the tendons and muscles, and partly on the periosteum. The operation was very troublesome. It strikes me as remarkable, first, that the disease returns always in the same place; secondly, that the patient has no pain in the tumours; thirdly, that sympathetic swellings

have never appeared in the axilla, which would not be absent in actual scirrhus.'

"The masses sent to me consisted of a considerable number of distinct nodules, differing extremely both in size and shape, but exhibiting the greatest similarity in appearance and structure. The entire mass of all, taken together, filled a vessel of six centimetres (2·3622 inches) in height, and about the same in breadth. Some of the smaller nodules, of 1 or 2 centimetres in diameter, were of a more globular shape, whilst most of the larger ones, some of which measured 3 or 4 centimetres in superficial diameter, and were from 1 to $1\frac{1}{2}$ centimetres in thickness, presented a flatter basis, while the rest of the circumference was, on the whole, semi-globular, but was lobulated with numerous projections of various sizes up to a centimetre in diameter. So far as this lobulated and globular condition extended, the surface was smooth, shining, and covered only with some loosely attached fragments of connective tissue; on the basis, on the contrary, were observed a number of firmly attached striæ of a dense fibrous tissue which, in many places, was decidedly tendinous. In no situation did any special coat exist. The colour appeared both externally and on section to be a bright reddish-grey, with a slight shade of yellow; the consistence was everywhere considerable, the appearance rather translucent. On section a dense, felt-like, fibrous interlacement, whitish and striated on longitudinal section, more uniform, and of a yellowish-red colour on transverse section, was very easily perceived with the naked eye. These fibres, for the most part, radiated in a fan-like form from a point in the outer circumference, situated rather towards the base, and were gradually lost in the homogeneous substance forming the material of the lobes; some indications of lobes were found also in the interior of the nodules. The tumour, on the whole, therefore, closely resembled, on the one hand, the so-called fibroid tumours of the uterus; on the other, the ordinary form of neuroma (steatoma of the older writers).

"The microscopic examination completely supported this analogy. Thus it appeared that the internal structure was in all parts tolerably uniform. A dense fundamental substance, appearing striated on longitudinal section, from which distinct fibres were with difficulty separated, formed proportionally broad bands, ramifying in various directions and again uniting; the intervening spaces were occupied with similarly transversely intersected bands, which on the surface of section exhibited a firm homogeneous appearance. In this fundamental substance lay tolerably dense nuclei, appearing in rows on longitudinal section, separated only by rather slender intervals of substance of an oblong staff-like form, rather slight, and on transverse section small, roundish, and somewhat granular in appearance. Acetic acid made these nuclei very distinct, and gave the entire section an appearance closely resembling that of smooth muscular parenchyma. However, muscular cells could in no manner be isolated; after separation of the fibres naked nuclei were almost solely to be seen in the fluid.

"The tumour in its composition, therefore, completely resembled the formations recently described under the name of fibro-nucleated tumour. In order to establish with more certainty its internal

structure, a portion was boiled for some time in a hermetically sealed glass tube, in a Papin's digester, under a pressure of three atmospheres. The fluid so obtained, when filtered, afforded with alum and tannic acid copious precipitates, soluble neither in an excess of these reagents nor in acetic acid. Acetic acid caused a strong turbidity, becoming somewhat lighter when the acid was added in excess, in which ferrocyanide of potassium produced a copious precipitate. Basic and neutral acetates of lead gave rise to decided turbidity, which almost disappeared on the addition of acetic acid. Hydrochloric acid caused a turbidity almost entirely soluble in an excess of the acid, and completely disappearing on saturation with ammonia. Corrosive sublimate produced a strong turbidity.

"The residual more solid matter was very easily divided, and on microscopic examination was seen to consist entirely of fine spindle-shaped cells, in which the nuclei above mentioned were contained. When the mass was first soaked in an ammoniacal solution of carmine, and then super-saturated with acetic acid, the elements became particularly distinct, inasmuch as the cells appeared of a pale-reddish, and the nuclei of a dark-red colour. There could, therefore, be no doubt that the tumour consisted essentially of connective tissue, in which the cell-elements were most intimately connected with the scanty fundamental substance, so that in the ordinary mode of preparation only naked nuclei could be found.

"Formations of this kind have hitherto occurred to me only on the nerves, and indeed most usually in larger either ganglion-like or completely tuberculated tumours, most frequently in the brachial plexus. Little as such an idea was probable in the present case, on account of the size and frequent relapses of the tumour, the circumstance put forward by Dr. Schmidt, that notwithstanding the long duration of the affection, the axillæ had always remained free, indicates the eminently local nature of the disease. I, therefore, subjected the individual nodules with a view to this point to a more special examination, which showed that to several of them nervous filaments, very evident even to the naked eye, were attached, and were inserted exactly in the spot whence the fibrous filaments radiated into the interior of the tumour. To one of the larger nodules was attached a portion of nervous filament, recognised with certainty as such under the microscope, 12 centimetres in length, and about half a millemetre in thickness, which penetrated obliquely into the tumour. Internally I nowhere succeeded in discovering any nervous fibres; posteriorly, on the contrary, the nerves appeared to have undergone no essential change.

"If, therefore, it follows with the greatest probability that the tumour in question was a manifold neuroma characterised by an unusual tendency to relapse, the investigation at the same time again refutes the existence of the fibro-nuclear tumour so frequently spoken of of late, as it demonstrates that the apparently free nuclei were in the present case also contained in the interior of cellular elements of areolar tissue."

(B) CONCERNING WOUNDS AND ULCERS.

ART. 71.—*On the treatment of Phagedænic Ulcers by Irrigation.* By Dr. J. SUTHERLAND, Surgeon to the 8th Regiment of Native Infantry.

(*Indian Annals of Med. Science*, April, 1857.)

When Dr. Sutherland was putting this mode of treatment in practice in the regimental hospital at Dinapore, he was not aware that a similar mode of treatment had been adopted by Mr. Cock at Guy's Hospital (*v.* 'Abstract,' XXIV, p. 120). Dr. Sutherland was led to adopt this plan of treatment by an observation of the case first in order.

CASES.—A young soldier, a Seikh, had been under treatment for intermittent fever with enlarged spleen, and was taking iodide of iron and quinine; at this time a slight sore situated over the spleen took on a phagedænic character, spread rapidly, and threatened to involve a large portion of the abdominal parietes; the usual treatment, constitutional and local, was adopted, with little effect in arresting the spread of the ulceration; there was considerable fever and great pain in the dark and inflamed ring around the sore, nitric acid had been applied without effect, and the patient was very importunate for relief; morphia was given at bed-time to allay pain and procure sleep; under these circumstances it occurred to me that benefit might be derived from a continuous washing away of the morbid discharge as it was formed, and that water, made slightly warm, would be a bland application to the extremely irritable sore; accordingly I decided on having a continued dripping of tepid water over the foul ulcerated surface; this was effected by allowing the water to flow along a skein of thread, one end being placed in a vessel of water above the level of the bed, another end of the thread, (or what answers the purpose, nearly as well, a strip of calico), being placed over the sore.

The result of this treatment surprised me; an almost immediate arrest of the phagedænic ulceration took place, and pain and irritative fever quickly abated; from this time the cure was rapid, the sore granulated kindly, and in about ten days a large ulcerated space was filled up with healthy granulations.

The second case in which the remedy was used was equally satisfactory; the patient, a weak young man of a strumous diathesis and a constitution tainted with syphilis, had a bubo in the left groin, extensive sinuses (in the groin), had been laid open and the sore was healing favourably when it suddenly took on a phagedænic character and spread in all directions forming an extensive sore, which extending upwards threatened to penetrate the abdomen; having observed the satisfactory result of a continuous dripping of water over an ulcerated surface in the case above detailed, I was led to subject this patient to the same treatment; the result was equally gratifying, an immediate arrest to the spread of the ulceration took place and the sore healed rapidly; quinine, ammonia, with tinctura opii, which had been given some days previous, were continued for a short time, but no other local remedy was used to complete the cure.

The third case was that of a sepoy of the — N. I.; this man was admitted into the station hospital with an extensive ulcer on the right hip of eighteen months standing; according to the statement of the patient, he had been fourteen months under treatment in his regimental hospital, and, all applications having failed to heal the sore, he got leave to visit his home that change of air might do him good; the sore becoming worse, he applied for admission into the station hospital at this place; the ulcer was superficial, with jagged edges and unhealthy flabby granulations; there were several small, deep, foul ulcers around the large ulcer, at distances varying from one to five inches; the patient was, at first, very unwilling to submit to the treatment (as it required him to lie in a constrained position), asserting, with much appearance of truth, that he had not benefited by all that had been done for him before; he has been under treatment since the 3d instant, and the large sore has completely healed under the irrigating system, all the small ulcers have also healed, with the exception of two that could not be subjected to the treatment, owing to their position.

I think it probable, from the nature of the ulcers, that the addition of sulphas zinci or nitras argenti to the water would have expedited the cure, but I was unwilling to make the addition, as I wished to try the action of pure water alone on the sores.

Art. 72. — *On the treatment of Cicatrices from Burns.* By Mr. Skey, Surgeon to St. Bartholomew's Hospital.

(*Lancet*, Aug. 15, 1857.)

On a recent occasion we had an opprrtunity of seeing the plan adopted by Mr. Skey, at St. Bartholomew's Hospital, for removing the contraction of tissues consequent upon a burn. The patient was a little girl, (Emma B—, æt. 6 years,) the front of whose neck had been burnt some years before, and had so contracted as to produce a number of distinct bands, running from above downwards, without very great deformity. The contraction resulting from the burn was treated, whilst the girl was under the influence of chloroform, by making a number of short transverse incisions in various parts of the cicatrized tissues, which gaped as they were made. This plan Mr. Skey has found very efficacious in some eight cases, all of which have done very well. It has certainly the advantage over dissecting up portions of cicatrized skin, in that there is no danger nor risk of sloughing—an accident which not unfrequently makes a case worse than if nothing whatever had been attempted.

On a subsequent visit, we found these transverse wounds healing well, without any appearance of contraction of the cicatrix. She lay upon a flat bed, with her head considerably lower than the shoulders, and the wounds are dressed with narrow pieces of strapping, so as to approximate the *ends* of a cut to each other—not the sides—and lengthen out the old cicatrix as much as possible.

(c) CONCERNING DISEASES OF THE BLOOD-VESSELS.

ART. 73.—*On the treatment of Aneurism by Manipulation.* By Dr. GEORGE C. BLACKMAN, Professor of Surgery in the Medical College of Ohio.

(*American Quarterly Journal of Medical Science*, July, 1857.)

This is the third case in which this mode of treatment has been employed. The account of Mr. Fergusson's case, and of Mr. Little's, will be found in our last volume, p. 276.

CASE.—"John A—, æt. 28, a native of England, entered the Commercial Hospital on the 7th of April. Four months previously, he felt a sharp pain along the course of the femoral artery at the junction of the lower and middle third of the thigh, and for the first time he observed a pulsation in this region. He had worked for many years as a file-cutter, and had been accustomed to use a small anvil, which was held between his thighs. A swelling was soon detected, and this continued to increase until the time of his admission. There was a space of about three inches between the upper margin of the tumour and Poupart's ligament, and measured along the axis of the limb, the swelling was five inches at its base. The aneurismal bruit was very distinct, and the pulsations perceptible across the amphitheatre. Compression at the groin caused the tumour to diminish considerably in size, and it would immediately regain its former dimensions when the pressure was removed. The patient complained of numbness and other painful sensations in the knee, leg, and foot. As the tumour was daily increasing, and as there was no other indication of disease of the arterial system, I determined to bring the patient under the influence of veratrum viride, in order to subdue the force of the circulation. From the time of his admission he was kept on a low diet, and cathartics were administered. On the 11th, I ordered six drops of the tincture every three hours. On the morning of the 12th, I found that the pulse had been reduced in frequency from 94 to 65. At ten o'clock a.m., of this day, he was brought before the class, when with my thumb I pressed forcibly into the aneurismal sac, for the purpose of dislodging a portion of its fibrinous layers, hoping thus partially to obstruct the artery, and to favour the further deposition of fibrin in the sac. Skey's tourniquet was now applied with moderate force between the tumour and Poupart's ligament. The progress of the case may be learned from the following record, kept by Dr. N. J. Sawyier, the house-surgeon:

"At 12 a.m., his pulse being 110, full, strong, and bounding, he was bled ℥ix. Pulse came down to 50, soft and regular, and continued low for several days. (The following are extracts from the Case-Book):

"April 13th, a.m.—Suffers no pain or uneasiness at all; slept well last night. Entire limb diminishing rapidly in size. Kept the apparatus tight. General health good; whenever any untoward symptom arose, it was promptly met, and the patient kept in a good condition. At intervals, the shooting pain was felt in the tumour, but it gradually subsided altogether.

"17th.—Prof. Blackman ordered the tourniquet to be taken off, the bandage re-applied from the toes, up over the tumour, upon which it was to be tightly

wrapped, and the patient to be bled, after which the following was administered:

℞ Antimon. and Potass. Tart., gr. $\frac{1}{4}$;
Pulv. Opii, gr. $\frac{1}{8}$.
Sig.—Take every three hours.

Patient's pulse came down to 65, soft and regular.

19th.—*Souffle* ceased entirely, but the pulsation continues, though it is very weak.

"22d.—Pulsation in tumour has ceased altogether.

"25th.—Is in fine spirits; has no pain, and wants to walk about. General health very good.

"30th.—Has walked some steps, and complains of nothing but weakness.

"May 21st.—The pulsation in the tumour has never returned. The femoral is firmly plugged as far as the origin of the profunda, and in the popliteal space the pulsation of the artery is hardly perceptible. The tumour is daily decreasing in size, and the patient is anxious to leave the hospital and resume his business."

(D) CONCERNING FRACTURES AND DISLOCATIONS.

ART. 74.—*On the desirability of abandoning extension in the treatment of Fracture.* By Mr. SYME, Professor of Clinical Surgery in the University of Edinburgh.

(*Edinburgh Medical Journal*, Oct., 1857.)

The following important remarks are *apropos* of a case of fracture through the trochanters of the thigh-bone:

"George T—, æt. 23, recommended by Dr. Anderson of Selkirk, was admitted into the hospital under my care, on the 15th of January last, suffering from an injury which had been caused two days before, by a sack of flour falling with great force upon his left hip. I found him lying in bed, with the injured limb shortened, the trochanter major higher up, and more prominent than natural, and the knee turned over the sound one; in short, presenting all the characters of dislocation upwards and backwards. But, as a moderate degree of extension restored the proper aspect, and did so only while it continued in operation, I concluded that the injury was a fracture through the trochanters, in that peculiar direction which the late Mr. Guthrie had the merit of showing might cause eversion of the limb, and of which I placed on record soon after the publication of his paper, another case confirming, by the evidence of dissection, the correctness of this explanation.

"Previously to Mr. Guthrie's observation, there was much diversity of professional opinion on this subject, and the most eminent surgical authorities were completely at variance with regard to it. Thus, while Paré and Petit had recorded particular examples of the fractured limb being inverted, Louis and Sabatier denied that such a condition ever occurred. Boyer declared that he had neither met with it, nor could imagine the possibility of its occurrence; and Desault, on

the other hand, calculated its frequency as being in the proportion of one to four of the cases in which the toes are everted. The causes of eversion being the weight of the limb tending in that direction, as may be seen in a dead body, aided by action of the muscles, especially the flexors of the knee, the iliacus internus and psoas magnus, and the rotators passing from the pelvis to the trochanter major, while the principal or almost sole counteracting force lies in the anterior portion of the two smaller glutei muscles inserted into the forepart of the trochanter major, turning outwards of the limb should certainly be expected as the consequence of this fracture. But it was found by Mr. Guthrie, in examining the body of a patient, who had presented the unusual condition of inversion, that the fracture had detached the posterior part of the trochanter major, together with the trochanter minor, and left the anterior part of the former process connected with the shaft. Precisely the same state of things existed in the case that fell under my own observation, as may be seen from the illustration appended to its history.*

"It is worthy of notice, as Desault remarked, that the muscles which affect rotation outwards must be relaxed by the displacement consequent upon a fracture, as it will approximate their origins and insertions; and, there can be no doubt, that, in such cases, the eversion is counteracted by a very slight degree of force, more suggestive of passive than active resistance, or, in other words, of yielding to gravity rather than resulting from muscular contraction. Thus the effect of detaching the muscles of external rotation in causing inversion, would not be so much by preventing eversion, as by allowing the former condition to be produced through the agency of the smaller glutei, so that the state of inversion would be the only one truly dependent upon muscular contraction. In cases of inversion, I have accordingly noticed that the resistance to adjustment of the broken bone was greater than in the usual state of eversion. Independently of other considerations, the diagnosis of this particular injury is of importance in regard to the prognosis, since whatever difference of opinion may still exist as to the reparation of fractures through the neck of the thigh-bone, there can be no question as to their ready reunion when seated in the trochanters, and in cases of eversion it is impossible to discriminate with certainty, by external examination between these two conditions, but when the toes are turned inwards there cannot be any doubt as to the fracture admitting of complete recovery. While, therefore, prudence will always require that fractures of the upper extremity of the thigh-bone should be treated as curable, the surgeon must be cautious in promising a favorable result, unless inversion of the limb satisfies him that the case is certainly within reach of remedy.

"In regard to the means of treatment there does not appear to be any room for choice, since the one unquestionably most comfortable to the patient, and most conducive to the end in view, is the 'Long Splint of Desault.' It was accordingly employed in the case which led to these remarks, and with such success that the patient left the

* 'Edinburgh Medical and Surgical Journal,' 1826.

hospital on the 13th of March without there being almost any appreciable difference between the limbs by external examination. Sir Astley Cooper objected to this means of treating fracture of the upper extremity of the thigh-bone, that the pressure caused by its extending force would be apt to cause mortification in the feet of old people, who are most liable to suffer this injury. But I have long been satisfied, and by example as well as precept, endeavoured to inculcate, that the long splint is not required to maintain extension, and that the good effects produced by it depend entirely upon the prevention of motion in the limb. For this purpose it must be long enough to extend from the patient's false ribs to a little beyond the sole of his foot, and broad enough to equal the height of the knee, as it lies in the straight position, so that, if the patient is an adult, it should be about four feet and a half long, by four inches and a half in breadth. Unless the breadth of the splint be thus proportioned to that of the limb, it cannot prevent rotation; and unless long enough to reach the lower part of the chest, it must be equally incompetent to prevent motion of the hip-joint. Yet, in the 'Surgery' of Desault, by Bichat, it is represented as extending no higher than to the trochanter major, and not more than three inches in breadth. It is, therefore, not surprising that the splints of this kind, employed in practice, are so frequently defective in their essential requisites—being almost always too narrow, and either too long or too short. One sent to me lately from New York is six feet long, and three inches and a half in breadth, with a longitudinal slit for fixing at different distances a screw, having a hook at its extremity, for the more effectual maintenance of extension. But from what has been said, it will, I trust, appear that any such extension must be useless in fracture, through the neck or trochanters; and even when the shaft is concerned, an extending power cannot be required: since, if the broken surfaces are properly adjusted, it is unnecessary; while, if they are not so, it is altogether inadequate to replace them. So soon as possible after the injury, the fracture should be carefully set, through due extension and manipulation, guided by regard to the form of the sound limb, and then, if in the shaft, be supported by two lateral splints of pasteboard, or split wood, long enough to extend from the pubis and trochanter major to the knee, and which may be secured by four or five looped bandages. The long splint, if properly applied, will then prevent rotation and insure perfect immobility. There should not be any bandages employed that cannot be undone without deranging the limb; and, therefore, instead of several long rollers, such as are frequently used, a sheet or table-cloth is preferable—the splint being wrapped in it, until merely enough is left for folding over the thigh and leg. Under this mode of treatment, for which all the requisites are so simple that they may always be procured extemporaneously, recovery is completed with great comfort to the patient, and no less credit to the surgeon, there being, in general, hardly, if any perceptible difference in the limbs, instead of shortening to the extent of two inches or more, which happens so frequently, as to have been considered by some authorities as almost unavoidable.

"In conclusion, I beg to express my persuasion—

"1. That the great requisites for treating fractures successfully, are coaptation and immobility.

"2. That extension, or a struggle between the two opposing forces of muscular contraction and a mechanical power, is not consistent with either of these conditions.

"3. That, therefore, extension should be abandoned in the treatment of fractures."

ART. 75.—*On the treatment of ununited Fracture.* By Mr. SYME, Professor of Clinical Surgery in the University of Edinburgh.

(*Edinburgh Medical Journal*, May, 1857.)

"When there is merely a slight degree of mobility at the seat of injury, so that, although quite sufficient to prevent any useful exercise of the limb, it may require some care for its detection, there will be a favorable prospect of success, even after the expiry of several months, through the employment of means for the complete prevention of motion; and I have put upon record cases in which even the thigh-bone was rendered perfectly rigid by this simple expedient, in circumstances of apparently a very hopeless character, from the long duration of flexibility. But when the extremities of the bone remain quite separate, or even overlap each other, and are surrounded by a sort of fibrous capsule with cellular interstices, so that they admit of hardly less free motion than if there really were a joint between them, it is evident that merely preventing motion could not possibly prove sufficient for the production of an osseous union. It has been supposed, that the difficulty thus presented might be overcome by rubbing the ends of the bones together; by stirring up the texture connecting them through the agency of needles or tenotomy knives; by passing setons through the flexible medium of union; and by inserting pegs of ivory into the respective osseous surfaces. But, so far as I am able to form an opinion on the subject, all of these means are absolutely useless, and owe any share of credit that they may have acquired to the prevention of mobility which is conjoined with their employment. In short, I believe that the procedures in question cannot accomplish recovery in any case not remediable by the enforcement of rest, and that they, consequently, must always be useless, if not injurious. There is still another mode of treatment, which consists in cutting off the ends of the bone, so as to obtain two fresh osseous surfaces, and place the limb in a condition similar to that of a compound fracture recently inflicted; and this, I feel persuaded, affords the only reasonable ground for expecting success in cases not amenable to the influence of immobility. It is true that the experience of this method has not hitherto been at all satisfactory, through want of due attention to some circumstances in the mode of procedure, which must in a great measure determine the result. Of these may be specially mentioned an imperfect removal of the ends of the bone, and a want of complete immobility after the operation. The following case will, I hope, tend to illustrate the importance of attending to these points.

Case.—"J. H—, æt. 34, a private of the —— Foot, while discharging some duty in the Redan, on the 8th of December, 1855, after the occupation of Sebastopol, was blown up by a Russian mine, which had escaped detection, and, in addition to some slighter injuries, sustained a fracture of the left arm between two and three inches above the elbow. He walked up to his regimental hospital, where splints were applied, and retained for a month, when, there being no signs of union, the ends of the bone were rubbed together, and supported by a starched bandage. He left the Crimea on the 3d of February, and was sent to the hospital at Renkioi, where a seton was passed through the seat of fracture, and retained for five weeks without any benefit. On the 20th of May he proceeded homewards, and, after a long voyage of nearly two months, arrived at Portsmouth, whence he was transferred to Chatham on the 17th of July. No attempt to restore rigidity was made there, and at the end of two months he was dismissed the service, with a pension of one shilling per day, in consideration of his disability, which was regarded as equal to the loss of a limb.

"In the hope that relief might still be afforded, he applied to me on the 22d of January last, nearly fourteen months from the date of the injury; and finding that the arm was entirely useless through the extreme mobility of the ends of the bone, which overlapped each other to the extent of more than an inch, I resolved to adopt the only procedure that, in my opinion, afforded any reasonable prospect of remedy under such circumstances, which was to remove the ends of the bone, and afterwards maintain the most perfect rest. In preventing the motion of a joint, it is a most important principle, never to be forgotten, that as most of the muscles pass over two articulations, it is impossible to keep any one perfectly quiet without placing the whole limb under restraint. Proceeding under this impression, my first step was to have the arm put in an easy position, with the elbow bent at a right angle, and then covered from beyond the shoulder to the tips of the fingers with pasteboard and starched bandages, so as to form a case, which, when it became dry, effectually prevented the slightest movement in any of the joints. This case was next cut up on one side from end to end, so as to allow the arm to be taken out of it, and undergo the requisite operation, which was performed under chloroform. An incision having been made along the outer edge of the triceps, I exposed the upper end of the bone, and sawed off a portion of it sufficient for obtaining a complete osseous surface. The lower end, lying anterior to the shaft in a sort of capsule, could not be subjected to the saw, but was removed, to the extent of more than an inch, by cutting pliers. The arm was then supported by a couple of splints, and the patient lay quietly in bed for a fortnight, when the limb was placed in its pasteboard case, in which an aperture had been made over the wound, then nearly healed, and discharging a very little matter, that soon ceased entirely. The patient, feeling that the slightest motion was impossible, even if he had wished it, was relieved from any further restraint, and no longer remained in bed. At the end of a month, or altogether six weeks from the date of the operation, which was performed on the 30th of January, the limb was examined, and found to be quite straight, with a firm osseous union; so that the patient was able to leave the hospital, not only with his comfortable pension, but also with a perfectly useful arm."

ART. 76.—*A revision of the doctrine of Dislocation.* By Prof. ROSER.

(*Archiv für Physiolog. Heilkunde*, p. 42, 1857; and *Med.-Chir. Review*, Oct, 1857.)

Professor Roser lays down the following maxims respecting dislocation, as illustrated by dislocations of the femur, derived from observations, inquiries, and experiments continued over many years.

1. The essential obstacle to the reduction of a dislocation almost always consists, not in muscular contraction, but in the narrowness of the aperture in the capsular ligament. 2. The difficulty of reduction generally arises only from its not being at once possible to ascertain the direction and position of the luxated head in relation to the rent in the capsule. When these are found, the bone is either reduced of itself by muscular action, or a slight impulse, rotatory movement, &c., causes the head to slide in. 3. Much depends not only upon the size but upon the position and direction of the rents in the capsule. 4. The head of a dislocated bone is not, as a general rule, found in the primary position which was given to it by the force applied; but, under the influence of the flexion, adduction, &c., of the dislocated limb, immediately following, it assumes a secondary position. 5. The reduction-process must have for object, first, to restore the dislocated bone to its primary position, and thence to effect its return. 6. The classification of the dislocations of every joint must be based upon the essential anatomico-mechanical points; and the symptomatic classification adopted by Malgaigne is as unscientific as it is impracticable. 7. The most common dislocation of the head of the femur is downwards, when it passes beneath the tendon of the *obturator internus*. 8. This dislocation is produced by violent flexion of the hip-joint, during slight rotation of the thigh inwards. 9. The dislocation downwards becomes in general converted during extension (with rotation inwards) into dislocation backwards, *luxatio ischiadica*. 10. By abduction it may be converted into a *luxatio obturatoria*. 11. For the reduction of all these cases in which the hole in the capsule exists below, strong flexion appears to be necessary, in order to bring the head of the bone into its primary position, opposite the rupture of the capsule. 12. The dislocation on to the *foramen ovale* appears to be a mere variation of the dislocation downwards. 13. In the *luxatio obturatoria* the head of the bone is placed beneath and behind the *obturator externus*. 14. Malgaigne's 'perineal luxation' is only a slight modification of the *luxatio obturatoria*. 15. The dislocation forwards, between the *fossa ileo-pectinea* and the *psoas*, is produced by excessive extension with rotation outwards. A secondary displacement results from slight flexion. The reduction is brought about by extension and rotation inwards. 16. Luxation behind the *pectineus* is to be regarded as a mere modification of the *luxatio ileo-pectinea*. It is not to be considered as a *luxatio obturatoria*. 17. The extremely rare luxation on the outer side of the anterior inferior spine must be regarded as a modification of the *luxatio iliaca*, produced by violent rotation outwards. 18. The *luxatio iliaca* is the rarest of all the forms of dislocation, although it is commonly regarded as the most frequent. The

majority of those cases that have been so termed, and a considerable portion of those cases so denominated by Malgaigne, are, in fact, examples of *luxatio ischiadica*. 19. The *luxatio iliaca* essentially arises from rotation inwards, with adduction and flexion of the limb. Its reduction is based upon rotation outwards."

(E) CONCERNING DISEASES OF THE BONES AND JOINTS.

ART. 77.—*On a Disease resembling Caries.* By Dr. BALLINGALL, Acting Professor of Surgery, Grant Medical College.

(*Transactions of the Medical and Physical Society of Bombay*, No. 3, New Series, 1857.)

Dr. Ballingall's object in this paper is to direct attention to a disease of the shafts of long bones in external characters resembling "caries," but differing from it in being frequently curable without operation. He is induced to bring forward some cases of this affection, from a feeling that it is not generally understood (works on surgery not containing any special descriptions of it), and partly also from a conviction that cases remediable by treatment are occasionally set down as incurable, or subjected to operation. In doing this he claims no originality; the subject was first suggested to him by a passage in a paper of Mr. Syme's, which is as follows:—"Everybody knows that the shafts of bones, and especially the tibia, in consequence of chronic inflammation, are frequently enlarged, thickened, and at the same time loosened in their texture, which comes to have nearly the same appearance as that of the spongy articulating extremities. In bones so altered, caries occasionally occurs, or I should rather say a condition resembling caries, since it differs from this disease in one important feature, viz., incorrigibleness. I have hardly ever known this spurious caries resist the local application of blisters and internal use of oxymuriate of mercury; and I have felt very uncomfortable in seeing extensive incisions, rasping, trephining, and glowing choffers bristling with actual cauteries, employed ineffectually to cure complaints admitting of such easy remedy."

This expanded state of the dense tissue of long bones is described in surgical works, but only in a general way, and as unconnected with sinuses or ulcers of any kind. Now in many cases the inflammation goes a step farther, abscess forms, and, after the discharge of the matter, fistulæ are left having the same fungous granulation as in caries, and on passing a probe down to the bone it is felt to be rough and soft. Such a state is exactly what we find in caries, and probably may be called so by many surgeons, not being at all agreed in their definition of that disease. "Without therefore disputing about terms, I should simply state what I believe to be the fact, that a softened, and exposed state of the hard tissue of bones is frequently curable by medical treatment, while a similar state of the cancellated texture is extremely intractable, and generally requires removal of the affected portion.

"The only other disease with which the affection in question can be

confounded is necrosis, which almost invariably attacks the same tissue, but the sensation on probing will, I think, generally enable u to distinguish the hard and firm feeling of a piece of dead bone from the softened state above described, while, in long-standing cases, the detachment of the sequestrun will farther facilitate the diagnosis. It is quite possible slight exfoliation may occasionally occur, as it sometimes does in caries; no such result has, however, been observed in any of the cases I have seen.

"The pathology is, I believe, simply an inflammation of the bone, and its periosteum leading to expansion of its texture and ultimately to suppuration. The inflammation is probably frequently of syphilitic origin. In one of the cases observed, the patient had suffered from that disease; and in the second case, though the man denied having ever had any venereal disease, the subsequent occurrence of iritis, apparently syphilitic, rendered his statement doubtful.

"The treatment should be simply that of inflammation of bone, iodide of potassium being the remedy most commonly employed for this purpose. I would, however, recommend small doses of mercury to be given at the same time, and more especially in cases bearing evidence of syphilitic taint. The efficacy of the latter remedy seemed to me well shown in the second case, where very rapid closure of the sinuses occurred on the patient's mouth becoming affected by calomel given for the iritis. Locally a few leeches may be applied in the early stage where there is much tenderness, but a succession of blisters will be found most efficient in subduing the deep inflammation.

"The following are brief notes of some cases treated in the Jamsetjee Jejeebhoy Hospital:

"Case 1.—A Mussulman, admitted August 31st, 1854, with extensive cicatrices over the lower portion of the left scapula and several sinuses through which the probe could be passed down to the bone. This was felt to be exposed and softened. The disease seemed to have begun with abscess; but no precise history could be obtained. He denied having suffered from syphilis. The treatment consisted in the administration of iodide of potassium with the application of blisters. Steady improvement took place, and he was discharged, with a soundly cicatrised surface, on November 19th.

"Case 2.—A Mussulman, æt. 25, admitted August 31st, 1855, with sinuses over the eighth rib on the right side, leading to bare and soft bone. A good deal of periosteal pain was complained of in this case. Treatment consisted in the use of iodide of potassium and blisters, with small doses of Plummer's pill. This patient denied having suffered from syphilis; but, on September 22d, iritis, apparently syphilitic, appeared. For this calomel was given till the mouth was affected, and on October 6th the sinuses had quite healed.

"Two other cases, one of sinus over the scapula, the other over the ribs, were treated in the surgical ward; but the termination is not known, as one was discharged for misconduct and other deserted.

"I have very possibly overrated the importance of the above affection, but it has impressed me rather forcibly, from the fact of the majority of the patients having undergone long courses of treatment without benefit, and from the first patient (otherwise a stout healthy man) having, if his own statement be credited, been discharged from

service as a soldier in consequence of the incurable nature of the disease. The cases which I have brought forward are too few to draw any accurate conclusions from; my object has been chiefly to draw attention to the subject in hopes of further information, and to advocate a mode of treatment, which, while it may sometimes render an operation unnecessary, does not in any way interfere with its performance in case of failure."

(F) CONCERNING INSTRUMENTS.

ART. 78—*On the Lead-wire Suture.* By Mr. SPENCER WELLS.

(*Medical Times and Gazette*, May 30, 1857.)

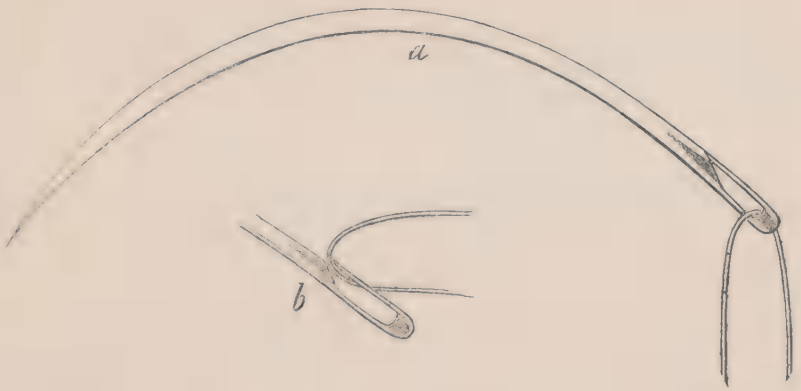
This suture, so much used by Dieffenbach, is not often employed in hospital practice. Yet it is occasionally useful when it is necessary to apply a suture to any part not easily reached, especially when it is desirable that the thread or wire should remain several days, because it is easily applied, and is not likely to cut through the soft tissues. Mr. Spencer Wells used it lately at the Samaritan Hospital in a case of vesico-vaginal fistula, in order to close a fissure which had

remained after the partial failure of a previous operation. The edges of the fissure having been vivified, the wire was passed by a curved needle, such as is shown above, the end of which is so made that the wire can be screwed into it. The wire is very soft and flexible, and as soon as it is passed the ends are twisted together by a pair of blunt forceps, as shown in this cut. These can be cut off at any length, and so doubled up on each other that no scratching or irritation is produced. Mr. Wells applied two of these sutures in the case just alluded to with the greatest ease, and the wire was twisted until the parts were brought into accurate apposition.

Art. 79.—*A New needle with opening eye.* By Mr. Spencer Wells.

(*Medical Times and Gazette*, May 30, 1857.)

In the operation now coming into fashion for the relief of prolapsus of the uterus, vaginal cystocele and rectocele, by perineal suture, as revived by Mr. Baker Brown, since practised by Dr. Savage and Mr. Spencer Wells, and more recently performed by Mr. Fergusson and Mr. Erichsen, some little delay and difficulty have been caused by the needles used for passing the deep sutures intended to support the quills. Mr. Brown and Dr. Savage use the common needle fixed on a handle, which is passed through both lips of the wound made by the removal of skin and mucous membrane. This needle is not passed very easily, and there is a little difficulty in holding the thread with forceps, and withdrawing the needle. Mr. Fergusson avoids this by using a common curved needle; but then he has to cut off his thread, and to tie a knot to form the loop which is destined to support the quill. In order to avoid this loss of time, Mr. Spencer Wells has contrived the needle shown in the annexed cut (*a*). It possesses all the



advantages of the open eye needle, without the diadvantages of the latter, namely, the possibility of impediment in passing it, and the probability that the thread may slip out. To all appearance the eye resembles that of an ordinary needle, but one side of it, as shown here (*b*), is made to open, so that the thread can be drawn out, the side closing again instantly by its elasticity. Needles on this plan will probably prove useful in other operations. Those used by Mr. Wells have been made for him by Messrs. Whicker and Blaise, of St. James's Street.

(G) CONCERNING OPERATIONS.

ART. 80.— *On the desirability of previously securing the vessels where amputation is performed in very feeble persons.* By Mr. STANLEY, Surgeon to St. Bartholomew's Hospital.

(*Medical Times and Gazette*, March 7, 1857.)

On a recent occasion Mr. Stanley performed the operation of amputation in two patients, both of whom were reduced by the disease to a state of extreme debility. One of them suffered from anchylosis of of the knee, the soft parts, skin, &c., having also been disorganized by sloughing, &c., up to within a little of the groin. The operation had to be performed just below the great trochanter. Blood being of the utmost value, it was decided to tie the femoral artery before completing the incisions; and, accordingly, it was divided in the first incision, which was made to cross the front of the limb. Having been secured without any loss whatever of arterial blood, a flap was cut posteriorly, and the amputation completed. The measure was one of caution, which may have been necessary. It is to be wished that surgeons were more often willing to sacrifice the *éclat* of an operation by attention to such details, which not infrequently are of extreme importance to the patient's chance of recovery.

ART. 81.— *On the Prevention of the Ill-consequences of Operations.* By PROFESSOR DEROUBAIX.

(*Presse Méd. Belge*, No. 17-24, 1857; and *Med.-Chir. Review*, Oct., 1857.)

Professor Deroubaix, Surgeon to the St. Jean, Brussels, terminates a series of papers upon this subject with the following summary:

1. If it is the duty of a surgeon to seek, by the improvement of his operative procedures, to obviate the immediate accidents of operations, the endeavour to discover the means of prevention of the secondary accidents, which are far more dangerous, is still more imperiously demanded at his hands.

2. Could the great surgical operations be rendered less dangerous in themselves, the intervention of surgery would be much more clearly and more frequently indicated in cases where the practitioner now often is obliged to remain a passive spectator of disorders which infallibly prove fatal.

3. The danger of great operations is not due to the size of the surfaces concerned, but to the number and volume of the veins divided.

4. When the division of veins proves mischievous, it does so by giving rise, through a mechanism the nature of which it is not always easy to appreciate, to the production of purulent infection, one of the most fearful consequences of traumatic lesions. The great danger

and extreme frequency of this complication justify the efforts made for its prevention or removal.

5. There are two directions, both perhaps equally good, by following which we may succeed in rendering pyæmia of much less frequent occurrence. The first of these consists in improving and rendering less uncertain the process of healing by the first intention; and the second in so modifying the divided surfaces as to convert them into a lesion of continuity of far less dangerous character.

6. Metallic caustics, at least in the immense majority of cases, do not give rise to purulent infection; but they are not applicable to certain operations—as, *e. g.*, amputations.

7. It is rational, then, when seeking for substitutive or modificatory, means for the prevention of pyæmia, to resort to such as most resemble caustics in their mode of action, and yet are exempt from the disadvantages of these therapeutical agents.

8. The tincture of iodine would seem to possess properties enabling it to fulfil these indications, seeing the deep-seated modification it impresses on the tissues, and the plastic effects it gives rise to. It does not act upon the ligatures, and therefore does not give rise to the danger of secondary hæmorrhage. When it is applied to bleeding surfaces after an operation, it induces a general hyposthenic effect of short duration, and a local hyposthenic effect, which imparts peculiar characteristics to the granulations and cicatrization.

9. The most remarkable results of this hyposthenization are, the much less indolence of the wound, the slight amount of suppuration, the notable diminution of the general reaction, and the maintenance of a condition approaching that of health. These phenomena offer no impediment to rapid cicatrization.

10. The discharge from the surface of the wound is considerably diminished as a consequence of the application of the tincture; but this does not prevent arterial hæmorrhage, or the loss of blood from the large veins.

11. The putridity of the wound becomes evidently diminished; and when the tincture is applied to the divided extremities of the veins, these become corrugated and narrowed, and then agglutinated. If phlebitis arises, it is obliterative and adhesive, not suppurating.

12. The application of the tincture to the sawn surface of the bones does not lead to necrosis.

13. The tincture imparts no preservative power against pyæmia when an open venous orifice, through which pus may be easily, so to say, mechanically introduced, exists at any point of the surface.

14. In ordinary cases, even the tincture is no certain preventive of purulent infection. When, after it has been applied, we find the vicinity of the wound remaining very painful, we should suspect a commencement of phlebitis, and the course of the pain should be carefully inquired into.

15. It should be remarked that as the general hyposthenization which results from the application of the tincture exhibits itself in symptoms, comparable to a certain point to those produced by chloroform, prudence is required in the simultaneous or successive employ-

ment of the two substances. Perhaps this is the principal defect in the iodine.

16. The injection of the tincture into the veins is immediately fatal. It induces an entirely peculiar coagulation of the blood, incapable of being confounded with any other pathological or spontaneous coagulation.

17. Nevertheless, this medicinal substance cannot, when applied to a bleeding surface, be carried in substance into the torrent of the circulation, unless, indeed, venous orifices be maintained open by adhesions. It is absorbed in the state of an alkaline iodide, and may be found in such a state of combination in the blood and urine. The amount ordinarily absorbed exerts no ill effect upon the economy.

(H) CONCERNING ANÆSTHETICS.

ART. 82.—*Statistical Inquiry into the effects of Chloroform.* By Mr. FENWICK, Lecturer on Pathological Anatomy at the Newcastle College of Medicine.

(*Medical Times and Gazette*, June 6, 13, and 27, 1857.)

The facts contained in the present paper are derived exclusively from the Newcastle Infirmary—the experience of seventeen years and a half before the introduction of anæsthetics being compared with the experience subsequent to that period. The conclusions do not agree with those already arrived at by Dr. James Arnott ('Abstract,' XXIV, p. 274). How Mr. Fenwick deals with his subject will appear from what he says about *amputations:*

"Before the use of chloroform there were registered 225 amputations of the thigh, leg, and arm, of which 54, or 24 per cent., died. Since the use of anæsthetic agents 149 cases of similar operations have been recorded, of which 36 died, showing also a mortality of 24 per cent.

"Before, however, we can draw any conclusion from such facts, we must carefully exclude all those circumstances which are already known to produce an effect upon the mortality of amputations. It is, for instance, well known that amputations performed on account of accidents are, on the whole, nearly twice as fatal as those required for long-standing disease. Now, if we divide the foregoing numbers into these two classes, we shall find that before the introduction of chloroform there were 144 pathological amputations, with a mortality of 19 per cent.; while since its employment there have been only 61, of which 13 per cent. has died; and while of 81 traumatic amputations which took place in the former period 32 per cent. died, only 31 per cent. perished in the latter period. The equal mortality obtained from a general average of all amputations is thus seen to have arisen from the smaller comparative number of operations performed for disease. If the records of other hospitals were carefully examined, it is probable that the increase in the mortality of many of them would be found more apparent than real; for limbs are now *saved* which

twenty years ago would have been removed without the slightest hesitation.

"But we know also that the ratio of mortality varies according to the part of the limb at which the operation is performed. Thus, amputations of the thigh are four times more fatal than those of the forearm, and it is therefore absurd to class them together. The following table (Table I) shows the amputations, divided according to the part of the limbs at which they were performed, with their percentages of mortality.

"It is plain from this table that, since the employment of chloroform, there has been a diminution of mortality; thus, in amputations of the thigh for disease there has been 5 per cent. less death, while after accidents 17 per cent. have been restored to health, who formerly would have perished. In the pathological amputations of the leg there is a difference of 8 per cent. in favour of chloroform; and while 1 out of 3 died after the removal of the forearm for accidents in the former series of cases, no death had occurred out of 8 in the latter. The only exceptions are to be found in the traumatic amputations of the leg, and in the pathological amputations of the arm. In the former there is an excess of deaths since the introduction of chloroform amounting to 5 per cent., and in the latter the cases being only 2 in number do not warrant us in drawing any deduction from them.

"I showed in a former paper* that the period in which persons usually sink from the shock of an amputation is within four days after its performance; that from the fourth to the twenty-first day is the usual time during which death occurs from phlebitis and those secondary inflammations which are generally supposed to arise from the introduction of pus into the blood. It will be interesting, therefore, to compare the dates of deaths before and since the employment of anæsthetic agents. In Table II the chances of death of each person who has suffered amputation are shown.

"There can be no doubt, from this table, that the danger from shock has been partly decreased since the use of chloroform. In the former series it is seen that a person was most likely to sink from this cause after the injuries of the thigh, and that 1 in every 2·66, or 37 per cent. of those operated on had perished within the first four days, while only 1 in 4·5, or 22 per cent., sunk in the same time in the latter period. In amputations of the leg there has been an increase in mortality of 1 per cent. during the first four days, when the operation has been performed for accidents since the use of chloroform; but this may readily be accounted for by the greater number of double amputations that are included in this series. Before the use of chloroform deaths had occurred from shock in the amputations of every part, excepting in those performed upon the arm, whereas since its employment none have sunk from this cause, excepting when it was required for severe accidents of the thigh and leg. Such observations are borne out by the experience of most operators. It seems

* Report of Surgical Operations, 'Monthly Journal of Medical Science,' October, 1847.

Table I.

	Without Chloroform.									With Chloroform.								
	Pathological.			Traumatic.			Total.			Pathological.			Traumatic.			Total.		
	No. of cases.	Deaths.	Mortality.	Number.	Deaths.	Mortality.	Number.	Deaths.	Mortality.	Number.	Deaths.	Mortality.	Number.	Deaths.	Mortality.	Number.	Deaths.	Mortality.
Thigh	50	9	18 per ct.	8	5	62 per ct.	58	14	24 per ct.	23	3	13 per ct.	11	5	45 per ct.	34	8	23 per ct.
Leg	74	15	20 per ct.	38	14	36 per ct.	112	29	25 per ct.	33	4	12 per ct.	46	19	41 per ct.	79	23	29 per ct.
Shoulder-joint . .	—	—	—	5	2	40 per ct.	5	2	40 per ct.	1	—	—	5	2	40 per ct.	6	2	33 per ct.
Arm	11	1	9 per ct.	24	4	16 per ct.	35	5	14 per ct.	2	1	50 per ct.	18	2	11 per ct.	20	3	15 per ct.
Forearm . . .	9	3	33 per ct.	6	1	16 per ct.	15	4	26 per ct.	2	0	—	8	—	—	10	—	—
Total . .	144	28	19 per ct.	81	26	32 per ct.	225	54	24 per ct.	61	8	13 per ct.	88	28	31 per ct.	149	36	24 per ct.

Table II.

Cause of Amputation.	Within four days.		Four to seven days.		Second week.		Third week.		Fourth week.		Fifth week.		Sixth week.		Seventh week.		Ninth week.		Above nine weeks.	
	Without chloroform.	With chloroform.	Without chloroform.	With chloroform.	Without chloroform.	With chloroform.	Without chloroform.	With chloroform.	Without chloroform.	With chloroform.	Without chloroform.	With chloroform.	Without chloroform.	With chloroform.	Without chloroform.	With chloroform.	Without chloroform.	With chloroform.	Without chloroform.	With chloroform.
Injuries of thigh	1 in 2·6	1 in 4·5	—	1 in 7	1 in 5	—	1 in 4	1 in 6	—	—	—	—	—	—	—	—	—	—	—	—
Ditto leg . .	1 in 9·5	1 in 8·8	—	1 in 39	1 in 8·5	1 in 12	1 in 7	1 in 11	1 in 26	1 in 32	1 in 25	1 in 31	—	—	—	—	—	1 in 30	—	1 in 14
Ditto arm . .	—	—	—	1 in 26	—	—	—	1 in 25	1 in 8	—	1 in 21	—	—	—	—	—	—	—	—	—
Amputation of shoulder-joint	1 in 2·5	—	—	1 in 5	—	—	—	—	—	1 in 4	—	—	—	—	—	—	—	—	—	—
Diseases of thigh and knee .	1 in 25	—	1 in 48	—	1 in 23	—	—	1 in 11	1 in 15	1 in 21	1 in 42	—	—	—	—	—	—	—	—	—
Ditto leg and foot . .	1 in 74	—	1 in 36	1 in 25	1 in 14	—	1 in 33	—	1 in 64	1 in 24	1 in 63	1 in 23	1 in 62	—	1 in 61	—	1 in 60	—	—	—
Ditto arm and elbow . .	—	—	—	—	—	—	1 in 11	—	—	—	—	—	—	—	—	—	—	—	—	—
Ditto forearm .	1 in 9	—	1 in 8	—	1 in 7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

generally allowed that the use of anæsthetic agents greatly lessens the shock of an amputation, and this means consequently enables us to operate under circumstances where without it we should dread to employ the knife. Formerly the brandy bottle was an invariable accompaniment to the amputating case; now it is rarely necessary to stimulate the patient. Formerly most surgeons declined to remove a limb after an accident until reaction had taken place; now many do not hesitate to operate in the stage of collapse.

"But the accusation that has lately been brought against chloroform is, that it increases the tendency to pyæmia, and the other secondary diseases that cause the chief mortality after amputations. In Table II it is seen that in injuries of the thigh, in the former period, 1 in 5 was lost from the fourth to the fourteenth day, and 1 in 4 in the third week; but in the latter period only 1 in 7 died from the fourth to the fourteenth day, and 1 in 6 from the fourteenth to the twenty-first day. In amputations of the leg for injuries, although the general average of mortality appeared to have increased since the introduction of chloroform, a less amount of death has really taken place between the fourth and twenty-first day. Thus, in the former period, 1 in 8·5 in the second week, 1 in 7·5 in the third week, and 1 in 26 died in the fourth week; while in the latter period 1 in 9·7 perished between the fourth and fourteenth day, 1 in 11·6 in the third week, 1 in 32 in the fourth week, and 1 in 31 in the fifth week. The cause of death in 14 cases is recorded as follows:

"5 died of pyæmia, 1 of erysipelas, 1 of fever, 1 of hæmorrhage, 1 of pneumonia, 1 of gangrene, 2 of tetanus, and 2 of hectic. We unfortunately have not the means of comparing this list with the causes of death in this hospital before the use of chloroform; but if we compare it with the numbers who died in the Glasgow Infirmary, we shall find that there is no foundation for the opinion that chloroform tends to produce pyæmia. In the list I have just given there are only 6 cases of pyæmia and visceral inflammation out of 14 deaths, forming 42 per cent. of the whole; while in the Glasgow report, if we in like manner exclude those cases that died from shock, we find 61 per cent. were cut off by these diseases. It will then, I think, be sufficiently apparent that if we take the results of amputation as a test of the effects of chloroform upon operations in general, we shall discover no reason to regret the employment of this agent.

"Although the general average of deaths is the same in both cases, this has arisen from modern surgical improvements; and where the figures are fairly examined, a less amount of death is apparent since the use of chloroform. The danger from shock has been greatly lessened in amputations from accidents, and has been altogether lost in those performed for disease; and, although we cannot positively state that secondary inflammations have decreased since its employment, the mortality has been lessened from the fourth to the fourteenth day, and we have no evidence in support of a contrary supposition."

We must wait for other evidence before forming an opinion upon this important subject; but in the meantime we must agree with Dr. Arnott in thinking it a more rational plan to draw inferences

from the collected hundreds of various hospitals than from a few units contained in the report of a single hospital, and this the more, seeing that that particular hospital has been greatly increased in size, and on that account rendered more salubrious since the introduction of chloroform.

Art. 83.—*Case of death from Amylene.* By Dr. Snow.

(*Medical Times and Gazette*, Aug. 8, 1857.)

Case.—This, the second death from amylene, occurred in St. George's Hospital on Thursday, July 30th, in a case in which Mr. Cæsar Hawkins removed a small epithelial tumour from the back. The patient, a short, muscular man, was a tailor, æt. 24, who had been in the hospital several months, and had had three similar tumours removed, by as many operations, under chloroform; the last of these operations having been performed three weeks previously. He inhaled the amylene without any difficulty; in about two minutes he appeared to be unconscious, and, in another minute, the sensibility of the margin of the eyelids was somewhat diminished, and I told Mr. Hawkins that he might perform the operation. For this purpose the patient, who had been lying on his side on the table, was turned a little more on his face, or at least it was attempted to turn him, when he burst out into a kind of hysterical excitement, laughed loudly, and was with difficulty held on the table. Nothing was done during this excitement, which lasted about a minute. After it had subsided, I administered a little more amylene, although the patient had not recovered his consciousness; and then Mr. Hawkins performed the operation, which I believe did not last more than two minutes altogether. During the operation the patient was turned on his face. He rested chiefly, I think, on his knees and elbows. He was muttering in an incoherent manner, and making slight attempts to move, but was easily restrained. I gave him an inspiration or two of amylene now and then during the operation, with the intention of preventing his waking prematurely; for this purpose I turned the head a little to one side, and raised the face a little from the table.* I had concluded that the patient would not require any more amylene, and was expecting that he would show signs of returning consciousness or sensibility almost as soon as Mr. Hawkins had tied the suture which he was introducing; but, instead of this, the limbs became relaxed, and the breathing, though free enough, took on a noisy, snoring character.

This is a state which is common enough in the use of chloroform, and excites no alarm whatever, but I felt that it ought not to occur in the use of amylene, especially after it was left off. I therefore sought again for the pulse at the wrist, and could perceive it only with difficulty, if at all. I spoke to Mr. Hawkins, and we immediately turned the patient on his back. His face had already become livid, and his breathing was of a gasping character. Mouth to mouth insufflation of the lungs was performed, and between the insufflations there were spontaneous acts of inspiration, during which the air seemed to enter the lungs freely. In a minute or two the lips became of a proper colour, and the countenance had altogether such a natural aspect that the patient seemed to be recovering. The pulse at the wrist, however, could not be felt. No one listened to the chest at this time, for fear of interrupting the process of artificial respiration. After two

* Less than an ounce of amylene was poured out, and it was not all used.

or three minutes, Dr. Marshall Hall's method of artificial breathing was substituted for the insufflation, and it was continued very perfectly by the house surgeons and others for an hour and a half, with the exception of two short intermissions, which will be mentioned. During three quarters of an hour of this time there were spontaneous inspirations, during which air entered the lungs, in addition to that which entered during the turning process. Twenty minutes after the accident, the process of artificial respiration was suspended for about a quarter of a minute, to enable me to listen to the chest. I thought I could hear the heart beating regularly, but very feebly, and certainly there was a good vesicular murmur, and the air seemed to enter the lungs by the patient's own breathing, almost as freely as in health. At the end of three quarters of an hour, with the permission of Mr. Hawkins, I introduced two hare-lip pins which had been connected with the electro-magnetic battery, with the intention of performing galvano-puncture of the heart. The needles were introduced to the depth of about an inch and a half between the cartilages of the ribs, just to the left of the sternum, and on a level with the nipple. They were afterwards found to have penetrated the walls of the left ventricle, near the septum, but without reaching the cavity. There was a quivering contraction of the pectoral muscle when the needles were first applied, but no effect on the heart. The needles ought probably to have been coated with some non-conducting substance almost as far as their points. There were no further efforts of inspiration after this time, but this was probably only a coincidence. The electro-magnetic battery had been applied in the early part of the treatment by means of the wet sponges applied to each side of the chest, but it produced no effect.

An examination of the body was made by Mr. Holmes, the curator of the hospital museum, on the following day. A good deal of dark-coloured fluid blood flowed from the right cavities of the heart, and the left cavities contained but little blood. The heart was pale and somewhat friable; but a microscopic examination by Mr. Holmes did not show any fatty degeneration. The lungs were moderately vascular, and contained some small epithelial tumours of the same character as those removed from the back. There was a large cyst in one kidney, but with these exceptions, the organs were healthy. The vessels of the brain were not distended, and that organ was altogether less vascular than is usual after sudden death. No smell of amylene was perceived in the body.

Art. 84.—*On the anæsthetic action of Carbonic Oxide.* By Dr. Ozanam.

(*Archiv. Gén. de Méd.*, July, 1857.)

Dr. Ozanam relates the particulars of 30 experiments, of which 25 were on rabbits and 5 on man. These experiments prove unquestionably that this gas possesses anæsthetic properties, and these properties Dr. Ozanam considers to be more energetic than those of chloroform, but also more fugitive. He considers, moreover, that the gas is more easily respirable and far less unpleasant than the vapours of chloroform. It is not pretended that the inhalation of this gas is more free from danger than that of chloroform; on the contrary, more than one of the rabbits is said to have passed suddenly and unexpectedly from apparent to real death.

The gas was obtained from oxalic acid by the aid of sulphuric acid and heat, the carbonic acid produced at the same time being got rid of by passing the two gases—carbonic acid and carbonic oxide—through water.

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 85.—*Two cases of Encephalocele.* By (1) Mr. HOLT, Senior Surgeon to the Westminster Hospital; and (2) Dr. R. U. WEST, of Alford.

(*Lancet*, Sept. 5 and Oct. 3, 1857.)

Mr. Holt's case is also described by Mr. Z. Laurence in another part of the same number of the 'Lancet,' as well as an operation which he took upon himself to perform without Mr. Holt's consent or knowledge. Mr. Laurence's account of this operation is as follows:

"With the assistance of Mr. H. Taylor, of Guildford, I punctured the tumour at the apex below, and to the right (where the skin was most tense, and no venous enlargements or hairs existed), with a very fine trocar, and drew off gradually, in the course of about ten minutes, exactly two quarts of a thin, limpid, straw-coloured fluid, which was alkaline in its reaction, and highly albuminous. Not a single drop of blood was lost in the operation, nor did the child evince the slightest sign of pain; on the contrary, it smiled, and took the breast whilst the fluid was being drawn off. At last, however, it cried a good deal, which was soon accounted for by its vomiting up a large quantity of tenacious, white fluid (milk and mucus), containing also some entangled air, which burst out in large bubbles from its mouth. After this it seemed relieved, and went to sleep.

"On the completion of the operation, the tumour had collapsed into a sac, which, as far as I ventured to examine its contents, was empty.

"A week after the operation I found that no meningitic symptoms had manifested themselves, but that some fluid had re-collected, to the extent of about four ounces, in the sac. I *now* felt distinctly that a small *solid* tumour was present at the pedicle of the sac, in all probability, the cerebellum."

1. *Mr. Holt's case.*—A female, æt. $3\frac{1}{2}$ months, the child of Mrs. W—, of Guildford. Connected with the back of the head, just below the occipital protuberance, is a large cyst-like tumour, very elastic everywhere on pressure, and, when viewed by transmitted light, transparent throughout. Its measurements are as follow: Around the

narrowest portion or neck, nine inches; around the broadest portion, nineteen inches; in the antero-posterior direction, fifteen inches. Several large blood-vessels may be seen to ramify on the surface of the tumour, decreasing in size and extent as they approach its posterior extremity. Numerous isolated spots can be here and there detected, much resembling an enlarged varicose vein. The anterior half of the cyst is covered on its upper and lateral surfaces with slight delicate hair, an appearance which is altogether confined to these parts.

If the tumour be carefully examined, a constriction may be observed, distant about one inch from the median line, and extending along the whole of its upper aspect, becoming, however, indistinct, and finally obliterated inferiorly. A bi-lobed character is thus given to the tumour, and on the surface of the right or smaller lobe are three or four hemispherical elevations, caused by protrusions of the wall of the cyst at these parts, which are here exceedingly thin. If the finger be passed around the base of one these swellings, an abrupt and distinct margin may be plainly felt, and by the application of slight pressure they can be easily made to disappear. No pulsation can be perceived in any part of the tumour.

At birth the size of the tumour was considerable, quite as large as an ordinary cricket-ball. Its increase from that period has been gradual and constant. The child's health and condition is uniformly good, and, with the exception of the tumour from its great weight causing so much inconvenience as to require to be always supported, it does not appear to occasion the least suffering. The countenance is quite natural, and the action of the pupil regular; sleep is undisturbed, and the appetite good, The bones of the cranium are remarkably firm, and no trace of a fontanelle is discoverable. The mother has had four children, three of whom, by a former marriage, have died in childhood, from her account, from fever. There is no hereditary tendency to any complaint on either side, as far as can be ascertained. She has abundance of milk, and her health is excellent.

2. *Dr. West's case.*—May 29th, 1851. Mrs. B—, of L—, near Alford, was delivered, after an easy and perfectly natural labour, of a full-sized female child, which had a bag of integument of considerable size hanging down the back from the occiput. This bag contained fluid and a solid substance, which I suspected at once to be brain, in consequence of feeling that a portion of the occipital bone, in the centre of the expanded or "squamous" portion, was wanting. I punctured the bag, and let out a quantity, perhaps two ounces, of bloody serum. The child lived five weeks, and then died, with convulsive symptoms, and a peculiar, old-looking, staring expression of the eyes. For the last two or three weeks it appeared to suffer considerably, though for the first fortnight of its life it seemed to thrive, sucking well, and with all the functions well performed. Shortly before its death the discharge from the puncture became very offensive and purulent.

On examination after death, I found the bag contained the whole of the cerebellum, which was in a purulent and semi-putrid state, the result of disease, which was almost a necessary consequence of its

unprotected state. The skull, which contained nothing but the cerebrum, was flatter and smaller than natural.

This monstrosity may be regarded as the first stage of the deviation denominated by Geoffroy St. Hilaire, *Notencephalie*.

Art. 86.—*On the abuse of irritating applications in certain forms of Ophthalmia.* By Mr. Critchett.

(*Medical Times and Gazette*, Jan. 24, 1857.)

There was recently a case under Mr. Critchett's care, in the Royal Ophthalmic Hospital, in which the greatest benefit has been derived from desisting from the measures which had previously been employed. The patient is a lad of eighteen, to whose eyes, for four years past, stimulating drops had been daily applied, on account of chronic inflammation and thickening of the conjunctiva. His eyes had been kept in a state of constant irritation, and when admitted his vision was very imperfect, on account of superficial vascularity of the cornea. He had been sent up from a considerable distance in the country. Mr. Critchett directed the eyes to be left quite alone, a single seton thread being introduced in each temple. The improvement was extremely rapid, and within a week the greater part of the vascularity had cleared away. No doubt the seton has had some good influence; but, looking at the rapidity of the cure, it seems certain that the chief agent has been the rest from injurious applications. Cases more or less similar are constantly presenting themselves, in which, with a perverseness worthy of a better cause, irritating collyria have been employed for periods far too long.

Art. 87.—*On strumous Ophthalmia.* By Dr. Thorp.

(*Dublin Quarterly Journal of Medicine*, Aug., 1857.)

The substance of this paper, which is to consider the relation between ophthalmic hyperæsthesia and strumous ophthalmia, may be stated in the following propositions:

That in all cases of phlyctenular or strumous ophthalmia there exists, of necessity, a special lesion of the nervous apparatus of vision.

That this lesion is the cause of photophobia and the other pathognomonic symptoms of the disease.

That it precedes, in most cases, the development of the inflammatory or objective phenomena; and that these phenomena are directly influenced by this condition, and but remotely by the constitutional disorder.

That the lesion in question is a state of hyperæthesia, or exalted sensibility of certain nerves, viz., the optic and retina, and the ciliary and conjunctival branches of the ophthalmic of the fifth pair.

That the phenomena attendant upon photophobia—namely, contraction of the pupil, spasm of the orbicularis, sneezing, and lachrymation—are the results of reflex action, displayed in a morbid form under the influence of this lesion.

That inasmuch as the impression of light upon the retina is competent to excite closure of the eyelids as well as contraction of the pupil, as proved by the experiment of Magendie, already quoted, optic hyperæsthesia may be admitted to exist as an isolated pathological condition, capable of producing photophobia independently of other nerves.

That the symptoms of ophthalmic hyperæsthesia vary in intensity and character, according as the nerves referred to are separately or conjointly affected; and that physiological experiments, as well as pathological observations, sanction the division of the lesion into three forms.

That the first form (optic hyperæsthesia) is characterised by the impression of light producing a luminous or chromatic glare, attended with a peculiar and distressing, but not painful sensation in the eyes; and that its symptoms, subject to occasional intermissions, commonly precede for several days the appearance of inflammatory phenomena.

That the second or complicated variety of the lesion—that which engages all the nerves before mentioned—being quickly followed by the objective symptoms of strumous ophthalmia, can seldom be recognised for any length of time as a simple nervous affection, although invariably present in all unequivocal examples of the disease.

That ciliary hyperæsthesia (third form) is best distinguished from the other varieties by the neuralgic character of the pain, and that it more frequently follows than precedes the ophthalmic disease.

That a distinction should be made between the ordinary relapsing cases of strumous ophthalmia and those rarer examples of the disorder in which the symptoms pursue a course of greater certainty and steadiness, inasmuch as the therapeutical indications differ in the two varieties.

That in cases of phlyctenular ophthalmia attended with inveterate photophobia, where a satisfactory inspection of the eyeball is desirable or necessary, the anæsthetic influence of chloroform is the most suitable expedient.

That when scrofulous ophthalmia occurs in connection with chronic articular, or such like diseases, and protracted suppurative action is on the decline or has ceased, much benefit may be expected from setons and issues as prophylactic remedies.

That arsenic is a most valuable agent in inveterate cases of this disease, more especially those complicated with chronic eruptions of the scalp or cutaneous surface generally.

Art. 88.—*On the division of Cataract in situ.*

By Mr. Martin, Superintendent of Calcutta Eye Infirmary.

(*Indian Annals of Medical Science*, April, 1857.)

The outline of the cases reported in this paper is intended to demonstrate the utility of an operation which has been, for some years, more frequently resorted to for cataract than any other in the author's practice, both as a preliminary proceeding and as the principal operation for individual cases. Its object is to divide a portion of the lens near

the circumference, by making an opening in the capsule sufficiently large to admit the aqueous humour, in order that solution may be effected to a certain extent; the lens being left in its position, and the parts with which it is connected being undisturbed, or as little altered in their relative position as possible. A needle is entered through the tunics posteriorly and made to penetrate the lateral part of the capsule, and the substance of the lens at the circumference: it is then rotated a few times with a view of producing division of the lens, and, being then withdrawn, the operation is concluded.

"This operation," says Mr. Martin, "has advantages over others employed for division as follows, viz.:

"1st. That it causes no alarm or irritation to the patient.

"2d. By its means often an almost immediate improvement of vision takes place.

"3d. Scarcely ever is there any inflammation succeeding it.

"4th. It assists us in our diagnosis (of so much importance with regard to future proceedings) as to whether the lens alone or the capsule with the lens is opaque, also as to whether the lens is soft or hard, whether it has a solid nucleus with a soft circumference or not, &c.

"5th. The anterior hemisphere of the capsule is untouched, and, consequently, if transparent, does not become opaque as a result of the operation.

"6th. The aqueous humour is, by this operation, allowed access to the lens, without the lens being separated from its connections.

"This is the operation most generally performed in the infirmary for cataract, both as a preliminary and as a principal operation. In the greater number of cases of the disease, as it is seen among the natives of this country, the cataract is of a mixed consistence, and may be likened to jelly somewhat hardened, in a great portion, if not all, of the substance. This is often the only operation that is found necessary, but, in many cases, particularly if the nucleus is solid, it is found necessary to perform other operations for division, depression, &c., of what remains. As regards a subsequent operation for depression, it is believed that this preliminary operation does good by getting rid of the softer parts of the lens which, by their lightness, and by the bulk of the object to be depressed, cause it often to rise above the axis of vision after the depression. The softer circumferential parts having been removed by absorption, the subsequent operation enables the less buoyant mass now left, to remain in the position into which it has been depressed. There is also diminished risk of a smaller mass pressing upon and doing injury to the internal tunics.

"There are many cases in which it will be found by no means sufficient to have made a smaller aperture in the capsule, and to have admitted the aqueous humour within it, and incised the lens: it will be necessary to divide the lens more extensively, and lacerate the capsule also more freely; in many cases of the mixed form of cataract it will be enough to do this, although the operation may require to be repeated once or twice; but, in a certain proportion, we find that the opaque lens will not undergo the process of absorption, at any rate if it be left *in situ;* whereas, if we depress the remainder, it will, for

the reasons above mentioned, remain after the preliminary operation, below the axis of vision, and, if it do not become readily absorbed, will, at any rate, give rise to no irritation. In such cases, we may, with confidence, expect the patient to recover good vision, whereas in many cases, particularly where the native practitioners have operated, we find that the lens—bulky as it is often in the native's eye, compared with the posterior chamber and the globe—having been at once depressed has pressed upon the retina, or the iris, or contiguous parts, and done irreparable mischief. This I have found very rarely to have happened in my practice, where depression has been employed after at least one attempt at division, in the manner above reported.

"In a certain but not large proportion of cases, treated by this simple method, I have found no other operation necessary; the patient has attained good vision. But, in general, it has had the effect of slightly improving sight, and this will be seen in the cases above reported, often within a few days, or at any rate a moderate period (from five to twenty-seven days). By the time a month has elapsed, I often see that a patient who before had hardly a glimpse of light can see much more light than before; or, where he could not previously see objects, can make them out distinctly: as soon as it becomes evident that the improvement is not progressive, I then proceed to repeat the operation, or adopt such means as may be found necessary. Often the patient seems to be so well satisfied with the result of the simple operation, that he does not stay to have anything further done. There is another advantage connected with this procedure; this is, that if it be carefully done, there is not a possibility of the nucleus of the lens becoming dislocated. Sometimes we unexpectedly meet with a hard nucleus, or, at least, one sufficiently solid to cause great mischief, if lying in the chamber, with a rather soft circumference; but however much the soft part may become removed by absorption, the nucleus in this method cannot escape through the small aperture of the capsule: on this account the operation is not contra-indicated in cases where we suspect the nucleus to be hard, as we may, at any rate, reduce the bulk of the lens, and that I look upon as a point of great importance, particularly when our practice lies with the Bengallees, with whom the more perfect operation of extraction is, as far as my experience goes, the least successful of any. A small body, even if hard, will lie in the posterior chamber without giving rise to irritation, when a larger one, even less solid, would cause destructive inflammation of the organ."

Eighteen cases are related, of which the first six in order are these:

Case 1.—Nobin Doss, æt. 32, out-patient, December 31st, 1855. Lenticular cataract, left most advanced. Sees shadows of objects indistinctly.

January 4th, 1856. To day the operation of division posteriorly, the lens being left in situ, was performed.

9th.—Sees numbers of fingers well.

February 4th.—Sees features with attention pretty clearly.

7th.—Left hospital.

Case 2.—Narrain Doss, æt. 55, out-patient, December 17th, 1855. Lenticular cataract. Sees shadows of objects.

28th.—To-day the operation of division posteriorly, the lens being left in situ, was performed.

January 2d, 1856.—Sees numbers of fingers, &c., well (5th day.)

February 6th.—Sees features, &c., sight very good.

18th.—Left hospital cured.

Case 3.—Meeajaun, æt. 27, in-patient, January 17th, 1856. Lenticular cataract, most in left.

18th.—To-day the operation of division posteriorly, the lens being left in situ, was performed in left eye.

23d.—Sees objects, which could not do before.

March 6th.—Left hospital relieved.

Case 4.—Sonah, æt. 48, in-patient, January 25th, 1856. Cataract lenticular.

February 15th.—To-day the operation of division posteriorly, the lens being left in situ, was performed in left eye (5th day.)

20th.—Sees numbers, &c., well. Could not distinguish before.

March 10th.—Left hospital cured.

Case 5.—Moyzoodee, æt. 40, in-patient, February 29th, 1856. Cataract lenticular, looks demi-solid. To-day the operation of division posteriorly the lens being left in situ, was performed in right eye.

March 5th.—(5th day) sees very well, features, &c.

17th.—Left hospital cured.

Case 6.—Syed Mohamed Kosim, æt. 55, in-patient, December 6th, 1856. Lenticular cataract gelatinous at the circumference.

7th.—To-day the operation of division posteriorly, the lens being left in situ, was performed in left eye.

22d.—(15th day) distinguishes numbers well. Afterwards depressed. No improvement resulted.

Art. 89.—*On Spasms of the Eye after extraction of Cataract.* By Mr. White Cooper, Ophthalmic Surgeon to St. Mary's Hospital.

(*Lancet*, June 6, 1857.)

This accident is but little referred to in books, yet it is far from uncommon. Not less than a dozen instances have fallen under Mr. Cooper's notice, and of these he relates three as the text for a clinical lecture.

Case 1.—On September 27th, 1852, at 4 p.m., I performed extraction on the right eye of Miss J—, a maiden lady who for years had lost the use of her lower extremities from paralysis, and was a great sufferer from rheumatism and neuralgia. The operation was performed under chloroform, but the effect was not satisfactory; though unconsciousness was produced, irritability of the eye remained, so that the eyelids resisted, and the eye was much inverted. Every care was taken not to hurry the section, but there was so much spasm that the lens was shot out, together with some vitreous humour, the instant the flap was completed; the flap was at once adjusted, the lids closed with a strip of plaister, and a light bandage applied. The effects of the chloroform soon passed away, and the patient remained quiet on a sofa.

I happened to be sitting in the room at 8 p.m., whilst the patient lay dozing, when she suddenly sprang up with an exclamation that some one had struck her eye, though certainly nothing of the kind occurred. She was much

agitated, and it was difficult to convince her that a blow had not been inflicted. She described her sensation as that of a violent blow on the eye, which had burst it, there being intense pain and a most vivid shower of sparks. I immediately gave her a full dose of tincture of henbane with Hoffmann's anodyne, in camphor water, and she gradually became tranquil; there were slight returns of the spasm during the night, and again during the following day, the sensation being as if the eye were grasped and drawn back into the head, vivid coruscations attending each attack.

The eye was ordered to be soothed with a lotion composed of extract of opium, extract of henbane, and extract of poppy, half a drachm of each to eight ounces of water, and the sedatives were repeated every four hours.

During the week, Miss J— was much tormented with neuralgia of the eye, the brow and the cheek requiring the free use of anodynes; and on the fourth day, the unmistakable œdematous swelling of the upper lid confirmed the opinion I had formed, that serious prolapse of the iris must be the consequence of the repeated spasms and compression of the eye.

On the seventh day, I ascertained the condition to be as follows: The corneal section was widely separated, an extensive prolapse of the iris filling the gap and obliterating the pupil; there was a considerable blush in the eye, indicating the commencement of inflammation. To subdue this, leeches were applied, but ere the day closed my anxieties were increased by an unlooked-for complication, the patient being attacked with violent abdominal spasms and complete stoppage of the bowels, which became enormously distended.

Dr. Handfield Jones now saw this lady, and was of opiuion that the bowels were in a semi-paralytic condition. He prescribed the sixteenth of a grain of strychnine thrice daily, and directed the abdomen to be thoroughly rubbed with an ointment of belladonna and opium. This treatment was attended with the happiest effect; the spasms subsided, and on the third day the bowels were fully opened, an aloetic purge bringing away a quantity of dark offensive matter.

It is unnecessary to trace the daily progress of the case—it would be a weary detail of suffering extending over many weeks. The neuralgia, which is always present when there is prolapse of the iris was here aggravated by the idiosyncrasy of the patient. Not only was there intense pain in the neighbourhood of the eye, but also neuralgia in the back, and even in the lower extremities, which could only be subdued by the liberal use of opiates. No diminution took place in the prolapse of the iris, and deep-seated sub-acute inflammation gradually extinguished the perception of natural light, though luminous coruscations were a frequent source of annoyance.

At the expiration of two months, finding the corneal flap still projecting like a staphyloma, the gap being filled by the iris I determined to puncture this, to allow the distending fluid to escape, and then to apply a compress. The instant the puncture was made, a jet of fluid was expelled, and the projection sank; but such an attack of spasms, not only of the eye, but of the whole frame, came on, that I was really alarmed; there were cramps in the limbs and spasms in the abdomen, and the patient could only breathe convulsively. I immediately gave a full opiate, combined with chloric ether, and the patient gradually became tranquil. A compress was now applied to the lid, and gentle pressure kept up for a week. Great improvement in the form of the eye resulted, and there was marked relief as regards pain, but the

atrophy of the eye and complete extinction of the perception of light, precluded any attempt being made to form an artificial pupil.

Case 2.—I performed double extraction on a lady advanced in years on the 20th of December, 1856. For many years, she had been a great sufferer from rheumatism and from neuralgia, but this fact was not mentioned till after the operation; on the contrary, I was led to believe that she had enjoyed excellent health. During the operation, there was unusual spasm of the eyes, causing me to complete the sections very slowly. The lens was removed with facility from the left eye, and there was no escape of vitreous humour, but in spite of every precaution, the spasm of the right eye was so strong that the moment the section was completed the lens leapt out, together with a portion of vitreous humour. The flap was immediately adjusted, and time allowed for the spasm to subside. When the eyes were finally closed, both pupils were circular and the irides in their natural position.

This lady passed the following night and day well, but at eleven o'clock on the second night I was sent for, and found my patient in great pain and agitation. She stated that half an hour previously she had given a short sharp cough, and instantly felt a sensation as if the right eye had been violently squeezed, with vivid colours and brilliant sparks. I at once gave her a full opiate, and carefully fomented the eye; the pain gradually subsided, she passed a fair night, and both eyes were going on favorably the next day; but again was I sent for at night, and this time found that a servant had clumsily thrown down a clothes-horse, over which a green baize had been thrown to exclude the light of the fire. The patient awoke in great alarm, and was seized with violent spasms and scintillations in both eyes.

This was sufficient to convince me that there would be trouble here, and my expectations were fully realized; for though there ensued but little œdema of the lids, and but a moderate amount of neuralgic pain, seven weeks elapsed before I was able to obtain even a glance at either eye. The slightest attempt to raise the lid produced such a spasm that I was compelled to wait patiently until the irritability subsided, for subside I knew it would in time. My patient was a very peculiar and intractable person; so that, on the whole, I never remember a more trying case. And what was the result? Slight prolapse of the iris in the left eye, but good pupil and fair vision, which is steadily improving. The section in the right eye united, but the pupil was closed, and the globe has somewhat diminished in size. To have saved one eye, under the circumstances, was almost more than I expected, for my instructions were seldom obeyed by the patient. For instance, I had prescribed some medicine to be taken twice in the day. The following day I asked if it had been taken as directed. "Why, no," was the reply, "I did not like the trouble of taking two doses, so I took the whole quantity at once!"

Case 3.—On October 21, 1856, I performed extraction in this hospital on the right eye of Mrs. G—, and removed without difficulty a remarkably dense capsulo-lenticular cataract; for four days she progressed well, but on the fifth she happened to be asleep when I entered the ward, and the nurse abruptly woke her. Startled, she jumped up hastily, and immediately complained of her eye, which seemed (she said) violently squeezed, and pulled back in her head. The occurrence vexed me, knowing the probability of the section being disturbed; but I directed that the eye should be well and carefully fomented, prescribed a sedative draught, and desired the patient to keep perfectly quiet. Nevertheless, the lid began to swell, with a sensation as if a pea were under it—unmistakable indication of prolapse. On the seventh day I examined the eye, and found large protrusion of the iris, and considerable inflammation.

Six leeches were applied with marked relief, and frequent fomentation ordered, and in the course of a few days the redness subsided. The eye was kept almost constantly closed for a month, and the prolapse was twice touched with nitrate of silver; some irritation followed the second application, and it was not repeated. Belladonna was used, and gentle pressure by means of a soft compress and bandage was applied with some advantage; but notwithstanding all my efforts, the iris did not retreat sufficiently to admit of the pupil recovering itself, and useful vision was for a time suspended. I say suspended, because in this case there was not sufficient inflammation to permanently injure the eye, and the closure of the pupil was the only obstruction to sight. Here an artificial pupil can be made with great facility, and there is little doubt of vision being restored.

Commenting upon these cases, Mr. Cooper says:

"The symptoms of spasms of the muscles of the eye are, sudden acute grasping pain, with a sensation as if the eye were drawn back in the socket, generally attended with coruscations of light and colours, the result of compression of the retina. In the majority of cases it comes on within the first thirty-six hours after operation, generally during the brief interval between sleeping and waking, or just when the patient is dropping off to sleep, and is most marked in persons who have suffered from disturbance of the nervous system, as indicated by neuralgia, spasms, and cramps.

"The immediate indication is to tranquillise the nervous system, and this object is best attained by a soothing cordial draught, composed of thirty drops of Hoffmann's anodyne, twenty drops of Squire's solution of bimeconate of morphia, and a drachm of the compound tincture of lavender in an ounce of water. In some cases I have given six or eight drops of the tincture of Cannabis Indica on a lump of sugar with excellent effect. The most grateful application to the eye itself is a fomentation of hot water, but in using this the utmost gentleness is necessary, the irritability of the eye being so great that a very slight touch will often bring on a return of the spasm. For the same reason, it is preferable to darken the room, thoroughly excluding the light from the patient, rather than to irritate the eye by compressing it with bandages. And here let me give you a hint: never allow a looking-glass to remain in the patient's room. I have several times known much annoyance caused by a gleam of light falling on a mirror, and reflected to the patient's face; for the same reason have any chinks in the shutters stopped up; more mischief may be done by a bright ray of light streaming through a crevice, than by a considerable amount of general light, gradually admitted.

"It must be borne in mind that, for the better illustration of my subject, I have selected the most marked cases in my note-book. It by no means necessarily follows that destruction of the eye should follow spasm of the muscles; the immediate effect will almost certainly be disturbance of the section and prolapse of the iris. The prolapse may, however, subside, or not be sufficiently great to interfere materially with the success of the operation; or again, if the prolapse be so considerable as to cause obliteration of the pupil, vision may still be restored by an artificial pupil.

"Prolapse of the iris will be indicated by a slight œdematous swell-

ing, commencing at the inner canthus, and stealing along the margin of the upper lid; the lid becomes exquisitely tender, so that the patient shrinks from the slightest touch, and there is generally the sensation of a foreign body under it. There is a copious discharge of scalding tears, the patient avoids light, and the slightest movement of the lid. If you do manage to raise the lid, you will find the cornea thrown upwards, and there will be more or less redness of the conjunctiva and sclerotic; simultaneously with these local indications the patient will complain of aching over the brow, extending down the side of the nose and cheek-bone, which is tender to the touch; the pain is aggravated at night.

"The treatment which I believe to be best for prolapse of the iris is, first and above all, absolute quiet of the eye; the least handling or attempt to open the lids almost certainly brings on a return of the spasm, and of course keeps up the mischief. The object we should steadily keep in view is, to allow the iris to recover its position, and the section to become firm. The utter inability to raise the lid points out that Nature requires it to remain closed, in order that she may perform her work.

"It is generally recommended that the prolapse should be touched with nitrate of silver. In some cases I have seen this useful, in others hurtful; and on the whole, I am of opinion that time and quiet will attain the great object better, and with less hazard than the use of the caustic. I remember a case in which I assisted the late Mr. Dalrymple. Three weeks after extraction the eye remained irritable, there being a small prolapse, but sight was returning favorably. Wishing to hasten matters, Mr. Dalrymple touched the prolapse with caustic; violent pain came on, subacute inflammation followed, and the eye was lost. I believe that he used caustic no more in such cases.

"Time and quiet, then, are the main agents in the cure of prolapse of the iris; when the cicatrix is forming, advantage may be derived from the use of belladonna; and if there be congestion, the application of a leech or two from time to time will be serviceable. There is one thing, however, which we are called upon to ameliorate, and that is the frontal neuralgia. An ointment, composed of one drachm of extract of opium to four drachms of strong mercurial ointment, well rubbed in at night, is often efficacious; but I have found still greater relief afforded by painting the painful surface freely with a lotion composed of one grain of nitrate of silver dissolved in half an ounce of nitric ether. This sometimes acts like a charm in removing the pain. Another useful application is chloroform thus applied: a layer of cotton-wool is to be spread over the forehead, then sprinkled with chloroform, and covered with oiled silk. The vapour is thus confined without coming in contact with the skin.

"There is a point in the after-treatment of cataract cases to which I would draw your attention—namely, the importance of avoiding any sudden startling of the patient, especially from sleep; as I look back upon the cases in my practice in which there has been prolapse of the iris, I may ascribe this mainly to two causes—the eye being struck, or the patient being startled. It is not necessary that there should be a real blow, a mere touch will be sufficient to cause a sharp

action of the muscles of the lids and of the eye, and so the flap may be displaced. When, therefore, the eye is being cleansed, the patient should always be warned when the sponge or rag is going to be applied; for if not so prepared, a start will generally take place, and the eye may be struck.

"I have described in Case 2 the consequences of an alarm caused by the clumsiness of a servant. Impress upon the attendants the importance of quiet, and the most rigid attention to your instructions. These must be laid down with precision, especially when you have not the assistance of a nurse experienced in the management of eye cases."

Art. 90.—*Opacity of the Cornea removed by operation.* By Dr. Agnew, Surgeon to the New York Eye Infirmary.

(*New York Journal of Medicine*, Sept., 1857.)

Case.—"P. K—, a German, æt. 41, came under my care, at the New York Eye Infirmary, in April, 1856, for superficial opacity of both corneæ.

"He stated that, fourteen weeks previously he had had his face and eyes burnt by the explosion of a gunpowder blast, that his vision was not materially impaired at first, but that it began to fail on the occurrence of inflammation, and continued to diminish until, at the expiration of three months, perception of sight alone remained. During the progress of the inflammation various collyria were employed, and when using a solution of acetate of lead, he became rapidly blind.

"Up to the day of his admission into the infirmary, he had constantly suffered from photophobia, lachrymation, and a continued sense of ocular distress, which at times amounted to severe pain, and spread to circumorbital parts.

"Rest and consequent recovery from the fatigue of his recent journey, enabled us, on the day following his admission, to make a careful inspection of the eyes. Upon the centre of each cornea was a white enamel-like, circular patch, which, diminishing in opacity towards its periphery, disappeared in a narrow setting of transparent cornea, about a line in breadth. The patches reflected light quite brilliantly, and a thin substance seemed to be deposited beneath the epithelial layer, and either external to, or imbedded in, the external elastic lamina.

"With the assistance of atropine, we could observe, by an oblique glance, that the pupil was free in both eyes, and largely dilated. There was considerable zonular vascularity, and conjunctival redness, both of which were increased by the efforts made to expose the globe.

"As the opacity seemed to be superficial, and no hope could be entertained of procuring its absorption by topical or general medication, I determined to resort to an operation.

"The patient was accordingly placed in a supine position, and profoundly etherized. The right cornea was then exposed by means of a spring speculum, and motion of the globe anticipated by a grasp upon the conjunctiva with a pair of forceps. With a Beer's knife I first scraped off the epithelium, which proved to be the covering of the opacity, and the occasion of its lustre, and then, by a scraping and picking motion, attempted the removal of the foreign substance. From the centre of the cornea, a white scale nearly a line square was removed by an easy motion of the knife, disclosing a transparent cornea.

"The removal of the patch increased in difficulty as we approached its periphery, where the particles of earthy matter seemed to be glued together, and to the external elastic lamina, by lymph or thickened epithelium. Especial difficulty was encountered in endeavouring to pare away the opaque substance from the margin of a little pit, in which still rested the insoluble débris of a granule of powder. We were much pleased to find our scraping rewarded, however, by a tolerably clear view of the iris. The same procedure cleared the left cornea of a similar opacity.

"On the patient's returning to consciousness, he complained of greatly increased photophobia, a condition now easily explained by the absence of the corneal epithelium.

"The closure of the eyes by strips of adhesive plaster, and confinement in a darkened room, relieved the patient of the photophobia.

"No symptoms indicating interference occurring, the eyes were kept closed, and occasionally bathed with tepid water, until the fifth day, when, on removing the adhesive strips, the corneæ were found glistening as if covered by epithelium, and free from any considerable opacity. Where the periphery of the patches had been, was a faint line of a bluish-white colour, and in one or two places over the general corneal expanse, there were little specks, but not amounting in the aggregate to any serious obstruction of vision, as was evinced by the patient's ability to read the text of an ordinary German Bible.

"Three months from the date of discharge from the infirmary, which happened ten days after his admission, I received a letter signed by him, but written by his employer, in consideration of the inability of the former to write English, in which he says that his eyesight is not only sufficient for the ordinary purposes of a farm-life, but such as enables him to read with ease.

"The scales and scrapings were kindly and carefully analysed by Professor Doremus, who reported an entire absence of signs of lead, but unequivocal indications of the presence of an earthy salt; which evolved, under the action of an acid, carbonic acid."

Art. 91.—*On the diagnosis of obscure forms of Ocular Congestion.* By Dr. Quadri.

(*Annales d'Oculistique*, tome xxxvii; and *Medico-Chir. Review*, April, 1857.)

The diagnosis in obscure internal ophthalmias is often very difficult, and may lead to their being mistaken for purely nervous affections. Dr. Quadri cites a case in point in which the ophthalmoscope exhibited the retina in a normal state, and in which the absence of all symptoms of inflammation would have justified him in pronouncing a simple neurosis, when, happening to see the patient as soon as he awoke, he observed a very marked pericorneal injection, like that seen in iritis, and which at the end of an hour had disappeared. The same thing occurred the next day, and, in fact, the case proved an example of iritis, which was cured in the usual way, but the existence of which was indicated by no other symptom. In the normal state of the eye we observe only congestion of the superficial network of the conjunctiva on awakening; but the deeper-seated vessels are not engorged, unless they have become dilated as a consequence of disease. The observation of the eye at this hour may thus be of great utility in obscure cases.

Art. 92.—*Passage of the Nasal Sound or Catheter.* By Mr. Martin, Superintendent of Calcutta Eye Infirmary.

(*Indian Annals of Med. Science*, April, 1857.)

The cases here related are sufficient to show that there are instances of disease of the excreting lachrymal passages in which the use of the nasal sound or catheter may render great service. Nasal catheterism is however a delicate and often difficult operation, aud is capable of producing great mischief, when employed in unsuitable cases. It is a matter therefore of considerable importance to distinguish between the cases in which it is indicated, and the reverse.

"It seems to me," says Mr. Martin, "to be indicated in cases of chronic disease, in which there is partial or total occlusion of the nasal passage; the original disease, which has generally been acute or chronic inflammation of the sac or upper part of the canal having been subdued. In the majority of such cases, long after all acute action has subsided, there remains a fulness at the inner canthus of the eye; this fulness becoming, if fluid is allowed to accumulate, a tumour in that situation, remaining until the fluid is forcibly evacuated by pressure; in many cases the fluid can only be pressed in an upward direction; if it will pass both upwards and downwards, it is fortunate, for in that case the obstruction in the nasal passage cannot be complete, and is, most probably, capable of amendment. However, even if we find that the passage is totally obstructed, we may expect to do good by passing the catheter, and pressing with it with slight force at the point of obstruction, which will generally be about the commencement of the *ductus ad nasum*, below the lachrymal sac. Any pressure will probably produce some discharge of blood from the passage. I have not found this injurious. In acute cases of dacryocystitis, an occurrence of the kind would be to be deprecated, as it might aggravate the inflamed state of the mucous membrane; but in chronic states, where a considerable portion of the mucous membrane is thickened and congested, it is probable that a flow of blood from the lower aperture may do rather good than harm; at any rate, experience convinces us, by numerous examples, that, in cases of chronic disease, the discharge of blood does no harm: in most instances, on the next trial of the instrument, it has been found that the obstruction is less firm, and, probably, that the passage has been opened; nor has there been any increase of the slight irritation which is generally caused by the introduction of the instrument along the passage. There seems to be great analogy between stricture of the nasal passage and stricture of the urethra, and they may be treated in a similar way; in both a dilating instrument may be used to open or enlarge a passage, and, although sometimes much irritation is caused, it is necessary to persevere in the occasional use of the instrument. I generally pass the sound after the interval of a week or two, and retain it in the passage for at least a quarter of an hour at a time. There is, however, one important difference between the same disease in similar structures. Where the urethra is strictured, even although there may be an inflamed state present, it may be necessary, at the risk of causing great pain and

irritation, to secure a passage: in cases of stricture of the lachrymal passage it is not by any means an absolute necessity, and this gives us a great advantage in the treatment of the latter affection over the former. We can afford time to wait, until the acute action has all left the parts, before we try to re-establish the patency of the canal; in fact, if we were to attempt to pass a sound during the stage of action, we should not only fail in almost every case, but we should, most probably, increase the inflammation, and cause injury which might lead to caries or other disease of the bony structures surrounding the canal. Even if we could succeed in opening a passage, the inflammatory action going on would cause it to be closed again almost immediately. The operation, therefore, seems to be contra-indicated in all those cases of acute inflammation in which any part of the lachrymal excreting passages are involved, and which generally lead to fistula lachrymalis, to mucocele, to dropsy of the sac, &c.: but, when these results of inflammation exist, either with or without the coincidence of chronic inflammation, it will generally prove beneficial. I have found it useful even in those cases where an irritable state of the mucous membrane exists; there having been originally inflammation. This having been subdued, the membrane is left in such a condition that acute action is readily set up, sometimes periodically, at others by a change of weather: cold and damp particularly affect it; while this lasts, the patient is much annoyed by the obstruction of the canal, which causes mucous tears, &c., to collect about the inner canthus: in such cases, it will be found the best practice, after premising some treatment for reducing the acute action, to try to restore the patency of the passage. If we succeed once in doing this completely, there is much less chance of any acute inflammation causing total obstruction again; and, as the mucous membrane through the whole length of the canal will be restored to a comparatively healthy state if appropriate treatment be persevered in for a considerable time, the original disease may be cured. Of the beneficial effect of operative treatment in these cases, I had a very good example, in the case of an officer who had been some years subject to the disease, and who came under my care, having been obliged to leave Burmah, where he was serving with his regiment, on account of the extreme annoyance caused by frequent attacks of acute dacryocystitis, and the result—almost total occlusion of the nasal passage. The nasal sound was passed at intervals during a space of two or three months; at the end of which time he was, if not quite cured, so much relieved, that there was no reason to anticipate any return of the irritation. In the early period of the treatment, he felt much uneasiness during the passage of the instrument, and blood flowed from the membrane. This, however, did not cause any mischief nor protract the cure. The sound, having been passed up to the sac, was allowed to remain some time as usual on each occasion.

"As regards the operation, it may be stated that it is by no means an easy one at all times. The instrument I use is similar in shape to that described as Gensoul's sound; independent of the stricture, which may be as low as the lower opening of the duct, the difference of configuration of the bony parts surrounding the canal, in different

individuals, of the inferior spongy bone, &c., makes it difficult to pass it sometimes; in fact, great practice is required before facility in passing the instrument is gained by the operator; and it is advisable for all students and young practitioners in ophthalmic surgery to practise the operation of passing a sound along the passage. In the want of a regular nasal sound, a common probe, strong, and with about an inch of one end bent at right angles, will answer the purpose with the dead body. In passing the sound in the living subject, the student should be warned against continuing any attempt to pass it, if pain results, as it is most likely, in that case, he has not hit upon the right passage, and much mischief may be done.

"I am not aware that, in cases of obstruction of any part of the lachrymal canal, any other operative procedure will be found advisable; and I believe much mischief may be done, without, as far as I know, any benefit whatever accruing, from the use of instruments designated as puncta probes, &c., which are sometimes passed through the very delicate and easily lacerable passages at the superior part of the lachrymal canal."

Case.—John R—, æt. 30, in-patient, 7th March, 1856. Acute dacrocystitis has existed for the past year. Muco-purulent discharge, canals not perfectly closed. Pil. Hydrarg.; hirud.; blister, astringents, &c.

May 14th.—No inflammation—less discharge, canal partly open. To-day the nasal sound was introduced, could not pass it as far as the sac; it was retained for a few minutes.

17th.—There has been no discharge or irritation.

23d.—To-day the nasal sound was introduced; passed through obstruction—still stricture.

26th.—Passage of tears and mucus through nostril more than before.

30th.—Now no discharge, daily improving—in the end discharged cured.

Case.—Golam Nubbee Khan, æt. 40, in-patient, 8th April. Dacryocystitis of some standing; abscess over sac most in left. Abscess opened; hirud., &c. Mercurials, alteratives, &c.

June 21st.—To-day the nasal sound was introduced.

23d.—Passage more open.

July 3d.—To-day the nasal sound was introduced; some stricture exists.

10th.—Passage more open.

12th.—Left hospital cured.

Case.—Buxoo, æt. 25, in-patient, 7th March, 1856. Chronic dacryocystitis; abscess over sac, obstruction of canal. Depletion, blisters, &c.

May 20th.—No acute action. To-day the nasal sound was introduced up to stricture.

June 28th.—To-day the nasal sound was introduced; less obstruction.

July 8th.—To-day the nasal sound was introduced.

28th.—Says there is no obstruction to passage of fluid; discharged, relieved.

Art. 93.—*Two cases of Prolapsus Linguæ.* By Mr. Syme, Professor of Clinical Surgery in the University of Edinburgh.

(*Edinburgh Medical Journal*, June, 1857.)

Case 1.—"A girl, twelve years of age, who was recommended to my care by Dr. David Arvott, of Arbroath. The prolapsus had existed from the time of birth, and attained so large a size that its remedy seemed impracticable

without removal of the redundant portion. I therefore performed the operation by means of a Λ-shaped incision, tied the bleeding vessels, and united the cut edges by sutures. The wound healed without any bad consequences; but, to my great surprise, in the course of a short time, the tongue had resumed, to the full extent, its bulk and form, so as apparently to be in no respect different from what it had been previously to the operation. The tumour was then moistened with a strong solution of the sulphate of copper, and subjected to the pressure of a bandage, under which it gradually diminished in size, so as to be reducible within the mouth. But when the prospect of a satisfactory result was thus so favorable, the patient, from being unfortunately exposed to cold, suffered an attack of laryngitis, which speedily proved fatal.

"The experience thus acquired naturally led me, in accordance with the opinion of Lassus, to regard excision as improper, and compression as the preferable remedy; but no opportunity of acting upon this principle presented itself until last year."

Case 2.—"R. M—, æt. 15, recommended to my care by Dr. Malcom, of Perth, was admitted into the hospital on the 4th of March. The tongue was said to have been unnaturally large at the time of birth, and to have afterwards, increased, especially at the period of teething, and more recently after an attack of scarlatina. It was of a globular form and brownish colour, with irregular elevations on the surface, and a painful ulcer at one part from the irritation of the teeth.

"A strong solution of sulphate of copper—one scruple to one ounce—having been applied on lint, the tongue was compressed by a bandage; and the following measurements, which were carefully taken by my late house-surgeon, Dr. Marshall, will show the progress of diminution:

MEASUREMENTS.

March	7th,	circumference	8	inches,	length	$2\frac{1}{2}$	inches.
,,	8th	,,	7	,,	,,	$2\frac{1}{4}$	,,
,,	9th	,,	$6\frac{1}{2}$	,,	,,	$2\frac{1}{4}$	,,
,,	10th	,,	$5\frac{3}{4}$	,,	,,	$2\frac{1}{4}$	,,
,,	11th	,,	$5\frac{1}{4}$	,,	,,	$2\frac{1}{4}$	,,
,,	12th	,,	5	,,	,,	2	,,
,,	13th	,,	$4\frac{3}{4}$	,,	,,	$1\frac{3}{4}$	,,
,,	14th	,,	$4\frac{5}{8}$	,,	,,	$1\frac{3}{4}$	,,
,,	15th	,,	$4\frac{1}{2}$	,,	,,	$1\frac{3}{4}$	,,
,,	16th	,,	$4\frac{1}{4}$	,,	,,	$1\frac{3}{4}$	,,
,,	17th	,,	4	,,	,,	$1\frac{3}{4}$	,,

"March 22d.—Bandage and lotion continued. Tongue now projects one inch only from the incisors, but the circumference remains the same.

"April 1st.—Projection reduced to half an inch; circumference the same. Is able, with an effort, to close his lips over the tongue.

"On the 14th April, as no further change had taken place, and as the tongue could not be retained within the mouth, except by a voluntary effort of the lips, from the lower jaw being so much altered in form as to prevent the teeth meeting sufficiently to do so, I removed the small redundant portion by means of curved scissors applied transversely. Two vessels having been tied, the edges of the wound were stitched together. No bad consequence followed, and the patient was dismissed cured on the 18th of May.

"In reply to a letter requesting Dr. Malcom to acquaint me with the patient's subsequent progress, I received the following account:

"'Perth, 14th January, 1857.

"'My dear Sir,—Shortly after the receipt of your letter I visited the boy M—, at Forteviot, upon whom you operated for enlarged tongue. He has grown to be a fine tall young man, and is working with his father in a quarry, where he was employed when I called for him. He speaks and reads very distinctly, only with a lisp, but not more than hundreds of people in the world. I examined his mouth, and especially the lower jaw; the teeth meet to the first grinders, and then are separated. I told him that it was at your request I examined him; and he said that he finds that his front teeth are gradually approximating, and that the upper and lower jaws are daily much nearer each other. When I first saw him, and before your operation, he had a constant flow of saliva from his mouth; there is nothing of the kind now; he eats and drinks with perfect ease. Some relations of his, from a distance, came to visit his parents at the holidays, and, upon seeing him, did not know him.

"'As the lower jaw is so much disposed to approximate the upper jaw, I recommended him to persevere and wear an apparatus on the chin, from the top of the head, which, by constant pressure, would assist this effort of Nature in completely restoring the symmetry of the face, now that the cause of deformity is removed. It is only by the front face that you can see that there is any peculiarity in his appearance; his profile is perfect.

"'Yours very sincerely,

"'Professor Syme.' "'Wm. Malcom.

"From what has been said, I think it will appear that Lassus was right in regarding compression as the most expedient means of correcting prolapsus linguæ; and that even when, from the long duration of the disease, with consequent difficulty of replacement from alteration in the form of the jaw, it may be found requisite to curtail the organ, this should not be done until the tongue has, so far as possible, been reduced to its natural size. The incision will thus be limited to the smallest extent, and the texture concerned will be in the most favorable condition for healing."

Art. 94.—*On Ligature of the common Carotid Artery.* By Dr. James R. Wood, Surgeon to the Bellevue Hospital, New York.

(*New York Journal of Medicine*, July, 1857.)

In this paper Dr. Wood relates the particulars of nine cases in which he tied the common carotid, and he refers, at greater or less length, to no less than thirty-nine unpublished cases of the same operation occurring in the practice of New York surgeons.

In these cases the artery was tied for the following reasons:

Hæmorrhage.—Whole number, nine; of which six recovered and three died.

Cause of death—Two became hemiplegic; one, a few hours after the operation, dying comatose, no autopsy; the other, on the second day, also dying comatose, and revealing, on post-mortem examination, softening of the brain and inflammation of the pleura. One died on the eleventh day, and, on examination, was found to have had pericarditis with collections of pus in apex of lung and liver.

Malignant disease of head or face.—Whole number, seventeen,

of which four resulted in the apparent cures of the original disease; ten were decidedly benefited, growth of tumour being for a time arrested; two died; one not noted.

Cause of death.—In one, hemiplegia supervened twenty-four hours after operation, and death occurred in sixty hours; autopsy revealed extensive softening of the brain; in the second case, death occurred three or four days after the operation, from exhaustion.

Aneurism by anastomosis.—Whole number, ten; of which four were cured; one died; five were benefited.

Cause of death.—In the fatal case, phlebitis was found to have existed, pus found in cavity of deep jugular vein.

Aneurism of branches of carotid.—Whole number, four; all recovered.

Epilepsy.—Whole number, two; both benefited, but not cured.

Removal of tumour.—Whole number, seven; all recovered.

Secondary hæmorrhage occurred in five instances, slightly in two, and severely in three; all recovered, the hæmorrhage being controlled by pressure.

Date of separation of ligature was noted in twenty-four cases—maximum period, thirty-one days; minimum, nine days; average, fifteen days.

ART. 95.—*On the treatment of Goitre by the application of Biniodide of Mercury ointment and exposure to the sun.* By Captain CUNNINGHAM.

(*Indian Annals of Med. Science*, April, 1857.)

The extraordinary statements which we here reproduce from the pages of our able Indian contemporary, are contained in a memorandum signed by Major Holmes, the officer commanding at Segowlee, and communicated by Dr. Mouat, the Inspector of Gaols and Dispensaries in Bengal.

The part of the memorandum which concerns us runs thus:

"In the districts about Motiharee, Segowlee, Bethiah, Bhagoha, and on to Goruckpore, indeed along the whole line of the Teraie, the goitre is so prevalent that it can scarcely be an over-estimate to state that, in many localities, one individual in ten is afflicted with this horrible disorder.

"In some cases, the tumour attains a certain size, and passes into a chronic state, without serious inconvenience to the person affected; in others, it increases rapidly, and, at the end of a few years, after becoming an enormous excrescence, terminates in loss of intellect in some cases, and in others in death.

"In the cold weather of 1854-55, Captain Cunningham, second in command, 12th Irregular Cavalry, began to apply the biniodide to the goitre in the following manner.

"An ointment was prepared according to a formula, as follows:

"Melt 3 lb. of lard or mutton suet, strain and clean; when nearly cool, add 9 drachms of biniodide of mercury, taking care to make the powder fine by trituration in a mortar.

"Work in the mortar until no grains of red are apparent in the ointment, and put in pots for use, taking care always to keep both powder and ointment from the rays of light.

"Use as follows:

"About an hour after sunrise, apply the ointment to the goitre with a spatula made of ivory or thin broad smooth bamboo, quantity according to size of tumour—rub it well in for at least ten minutes. Let the patient then sit with his goitre held well up to the sun, and let him remain so, as long as he can endure it.

"It is probable that about noon, he will suffer severe pain from the blistering effect of the ointment, though no pustules are raised on the skin. About 2 p.m. the ointment should again be applied with a very careful and tender hand, and the patient should be despatched to his home, with orders not to touch the ointment on any account with the hand, but to allow it to be gradually absorbed, which absorption will be complete on the third day.

"This treatment is quite sufficient for an ordinary cure. Should the case be a very bad one, the patient is ordered to return next year, for the removal of what may remain of the tumour. Except in goitres of the very largest size, this is seldom necessary. After the application of the second year no goitre has been known to continue.

"The patients begin to come about the middle of November, and continue to the end of March; after that time the sun's rays act so violently on the medicine, that it is not advisable to apply it.

"The cures effected have been very numerous. On my arrival at Segowlee, I was glad to join Captain Cunningham in this good work; but, with him rests all the credit of having established it.

"The cases are not now so numerous as they were in 1855. At that time 500 or 600 were not unfrequently treated in a single day; a small charge of 2 pice for each cure was levied for some time, in order to make the people set more value on it; but, as this seemed to check some patients, it was discontinued.

"Until lately no exact account of the numbers treated has been kept; but, since Captain Cunningham commenced, up to the present time, it cannot have been less than 60,000. Many come from a very great distance, Goruckpore, Mozufferpore, Mulaye, but the cases in the vicinity are decidedly less numerous—in fact the disorder is being extinguished. In no case, except one, have we failed to make a complete cure during the second year."

Appended to the memorandum are also some answers to certain queries proposed to Captain Cunningham by Major Holmes. The Captain says—

"1st. In the cold weather of 1854-55, I must have treated (I should say) upwards of 20,000 goitre people, or rather 25,000; and, in one day, I have seen as many as 500 at my house, who were all treated.

"The people came in such great numbers, that (after giving the medicine free at first) I made each person pay 2 pice (Goruckporee, of which there are from 100 to 106 in the rupee), and actually collected rupees 160 in this manner. This alone proves 16,000 to have been treated; besides which all those who came back a second

and third time, and very many did so, had not to pay again; besides which a great number were treated before I commenced making any charge.

"So I cannot be wrong in putting down the whole number for the year at from 20,000 to 25,000.

"2d. From what the people have told me, and from the state in which I have seen some with enormous goitres (breathing with a noise like a broken-winded horse), I have reason to suppose that the increased size of the goitre does prove fatal in not a few cases; as, when so enlarged, it prevents the person afflicted with it from using any exertion, and, as I have been told, even from eating and drinking without extreme difficulty, which I can easily believe.

"3d. I have seen many cases of goitre patients whose intellect was decidedly affected by the disease I should say, as, after the goitre was reduced, they appeared much more intelligent and like rational creatures, which they were not before. However, there are so many idiots about this part of the country only slightly affected with goitre, that it would be difficult to say whether idiotcy was actually induced by it, or the symptoms increased in those whose intellect was naturally defective.

"4th. To my certain knowledge the biniodide of mercury did fail in one case to effect a cure. I applied it myself seven or eight times on one man, and was particularly careful in seeing that he did not rub it off, but it did not act upon him, which I could not account for. In old cases, where the goitre has become as hard as a stone, and about the size of a turkey's egg, I have found it fail; but, when the flesh is soft, I have seen the goitre wonderfully reduced, and I have no doubt but that it would be removed altogether were the people only to continue the application, which, however, they seldom do, owing to the great pain it causes.

"5th. I have never heard of any instance in which danger arose to the patient from application of the biniodide of mercury, though a man did come to me with sores on his neck, which he said had been caused by the medicine a year and a half before, but since then I have seen another man with similar sores, which the doctor said were scrofulous, and he never had the biniodide applied to his neck."

Art. 96.—*On Plastic Operations upon the face and neck.* By Mr. Teale, Surgeon to the Leeds General Infirmary.

(*Pamphlet*, Churchill, pp. 32, 1857.)

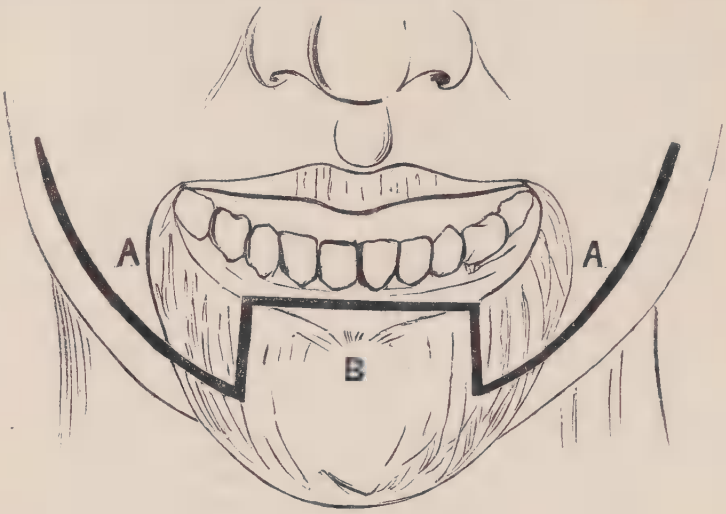
In this pamphlet Mr. Teale describes several clever operations for restoring the lower lip and for relieving certain deformities in the face and neck, and at the same time he relates six cases in which these operations were successfully put in practice. The nature of these operations and their importance will appear from the following quotations:

"1. *Operation for the restoration of the lower lip.*

"The usual cause which renders this operation necessary is the con-

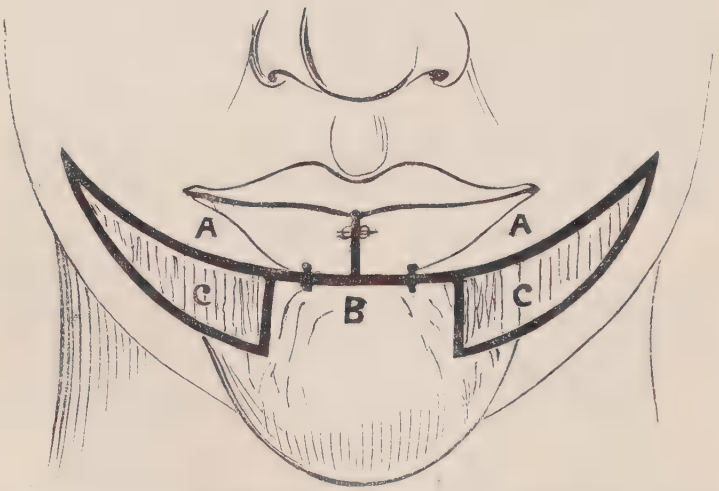
traction following deep and extensive burns of the neck. As contraction advances, the chin becomes drawn down to the sternum; the mucous membrane of the lower lip is turned outwards, and drawn to the lower edge of the chin; the incisor teeth of the lower jaw gradually assume a horizontal direction, and are drawn much in advance of those of the upper jaw. In extreme cases the lower incisors take a direction almost horizontal. The saliva is constantly dribbling away, and the tongue sometimes lolls out of the mouth.

"To relieve this sad condition the following operation is proposed:



A A. Lateral flaps formed of everted lower lip and cheek.
B. Central portion of everted lower lip.

"Two vertical incisions, about three quarters of an inch in extent, are made through the everted lip down to the bone. These incisions are so placed as to divide the upper portion of the everted lip into three parts —the middle being equal to one half of the natural breadth of the lip, while



A A. Lateral flaps united in the median line above the central portion of everted lower lip B. C C. Exposed surfaces left to granulate.

the two lateral portions are each equal to one fourth. From the lower end of each vertical incision the knife is carried in a curving direction outwards and upwards to a point situated about one inch from the angle of the mouth opposite to the second molar tooth of the upper jaw. The two flaps thus marked out and deeply incised are then separated from the bone, the mucous membrane uniting them to the alveoli being freely divided. Lastly, a bare surface is made along the alveolar border of the middle portion of the everted lip. The incisions being now completed, the lateral flaps are drawn upwards and united by twisted sutures to each other in the median line, and to the middle portion of the everted lip at their inferior border. In this way a new lip is, as it were, built upon the middle portion of the old one.

"2. *Operation for restoration of the upper lip.*

"The process of cicatrization sometimes reduces the upper lip to a narrow transverse band, drawn up close to the nose, leaving the upper teeth and gums exposed. This deformity interferes with the perfect closure of the mouth, and causes an unseemly aspect.

"The contracted upper lip in the fifth case of the present series was restored to its natural size and function by the following operation:

"A crucial incision is made (*en saltire*), having its point of intersection immediately below the septum of the nose. Each limb of this incision is about one inch and a half in length. The two limbs on each side diverge moderately as they pass outwards to the cheek, and enclose between them an acutely angular flap of skin and other tissues. This crucial incision is extended deeply through the entire substance of the imperfect lip and the cheeks. The parts implicated in the incisions are then freely loosed from their attachments to the superior maxillary bone by the knife being passed upwards between the bone and the remnant of lip. The parts being thus detached,

the two lateral angular flaps are drawn across the median line, dovetailing with each other, and thereby increasing the depth of the lip at the expense of its breadth. In this position the flaps are retained by one pin and twisted suture.

3. *Operation for relieving contractions of the neck:*

In some cases the contraction of the neck is so great that the head is bowed forwards, the chin drawn to the sternum, and the lateral movements of the neck greatly restrained. These evils may generally be much mitigated, and sometimes completely relieved by plastic surgery.

"In 1839, Mr. Carden,* of Worcester, operated upon a girl, æt. 14 years, who was much deformed by a burn, which occurred seven years before. The movements of the head were much restricted; the mouth was permanently open, the tongue protruded, the lower incisors projected horizontally, and there was constant dribbling of saliva. A transverse incision was made throughout the entire extent of cicatrix in front of the neck. The chin was then drawn upwards, and every tense band connected with the cicatrix was divided, until the head was relaxed nearly into its natural position. A flap of skin, three inches long and two inches and a half wide, was detached on each side from over the clavicle and chest. These were raised and united in front of the throat. The degree of improvement effected in this case, and tested by the lapse of four years, was highly gratifying.

"Subsequently to the performance of Mr. Carden's operation, a similar proceeding was adopted in several cases, with great success, by Dr. Mutter,† of Philadelphia.

"I have performed this operation in seven cases since August, 1848, and have witnessed it in some others by my colleagues at the Leeds Infirmary.

"In all the cases which I have seen there has been a marked and most satisfactory improvement in the movements of the head and neck. The displacement of the lip was also in a greater or less degree mitigated by the operation on the neck, but in several of the cases this particular deformity remained to such an extent as to render a special operation for the restoration of the lower lip subsequently necessary.

"In these autoplastic operations on the neck it is of essential importance, as stated by Dr. Mutter, that the incision of the scar should extend from sound skin on one side of it to sound skin on the other, and that every band of adventitious fibrous tissue beneath the scar should be divided until the bottom of the wound discloses a loose healthy cellular tissue.

"The flap to be transplanted may be taken from any neighbouring portion of the neck, shoulder, or thorax, where healthy skin can be obtained. In some cases, however, from lack of sufficient sound skin, I was under the necessity of including cicatrized skin in the flap.

* 'Transaction of Provincial Medical and Surgical Association,' vol. xii.

† 'British and Foreign Medical Review,' April, 1845.

"The very accurate adaptation of the flap by suture should be avoided, as great tension renders the flap liable to slough. It is, therefore, better to be content with attaching the flap only at its free extremity and one of its borders, and to leave the other border loose. Much may be done afterwards by careful dressing, during the healing process, to rectify any separation of the parts.

"As far as I have observed, the transplanted flap rarely unites to the edges of the wound by the 'first intention.' All that is usually accomplished in the first instance is an organic union of the cellular surface of the flap to the parts beneath. The more close approximation of the edges of skin is obtained during the processes of granulation and healing.

"When the bands of scar are so numerous or extensive as to require more flaps of skin than one to be inserted, it is better to repeat the operation at separate times. I saw much constitutional disturbance in one case from the operation having been conducted on too large a scale in the first instance.

"After the lapse of some months the transplanted portion of skin is generally found to have yielded to a process of stretching, so as to exceed considerably its original dimensions.

4. *Operation for restoration of the lower eyelids.*

"Eversion of the lower eyelid, its tarsal border being drawn far down the cheek, is a frequent result of contracted scars. Besides the revolting appearance caused by permanent ectropeon, the patient suffers habitually from a low form of inflammation of the conjunctiva and cornea, in consequence of these parts having been habitually deprived of the protection of the eyelid.

"The eyelid in such cases may frequently be restored to its natural position by the following operation:

"An incision is made across the cheek parallel to the displaced tarsal border, about three lines below it. The portion of skin between this incision and the edge of the tarsus, along with the whole substance of the eyelid as far as the edge of the orbit, is freely dissected upwards. The eyelid, thus loosened, is placed in its natural position, and the chasm left thereby is filled by a piece of skin transplanted from the side of the face. This operation succeeded perfectly in the right eye of William Bradley, the subject of the fifth case. It was attempted with only partial success in both eyes of John Leach, the subject of the fourth case. The want of complete success, in this instance, was owing to the total absence of any portion of sound skin in the neighbourhood; on which account I was obliged to transplant on each side a piece of cicatrix, which, having only low vitality, sloughed to a considerable extent. In two other cases, not included in this series, the operation succeeded perfectly.

5. *Restoration of the upper eyelids.*

"From the contraction of scars of the upper eyelids and forehead, the upper lids are sometimes everted, and their tarsal border is bound firmly to the superciliary ridge.

"A plastic operation similar to that for the lower lids may be practised with advantage in this deformity. In the case of John Leach I operated on each of the upper lids, by making a transverse incision parallel to the tarsal border, at a distance of three lines above it. The substance of the eyelid was then dissected downwards, and freely loosened from the edge of the orbit. The upper eyelid being thus restored to its natural position, the vacuity was filled by a piece of skin transplanted from the temple. In both eyes the operation succeeded."

The cases are of great interest, but for these we must refer our readers to the pamphlet itself.

(B) CONCERNING THE CHEST, ABDOMEN, AND PELVIS.

ART. 97.—*On excision of the Clavicle.* By Mr. SYME, Professor of Clinical Surgery in the University of Edinburgh.

(*Edinburgh Medical Journal*, Sept., 1857.)

CASE.—"Agnes W—, æt. 20, from Glasgow, was admitted into the hospital under my care on the 27th of February last, with the view of obtaining relief from a tumour on her left shoulder, firmly attached to the clavicle and acromion process of the scapula, but not interfering with the movements of the joint. It was about the size and form of a cocoa-nut divided longitudinally, and of a reddish colour, especially at the most prominent part, where a puncture had been made some time before. In addition to these unpromising characters, the consistence, which was soft throughout, and in some parts almost fluctuating, coupled with the fact that only five months had elapsed since the swelling commenced, led me, at first sight, to think very unfavorably of the case. Before deciding against interference, however, I considered it proper to make a more careful examination, which induced me to entertain some hope of being able to save the patient, who had no other complaint, and seemed to be in good general health.

"On tracing the clavicle from its sternal extremity towards the tumour, I felt that it was distinctly expanded at the base of the morbid growth, which I therefore concluded had originated from the bone, and not simply adhered to it. But having long taught and practised upon the principle that osteosarcomatous tumours never extend their roots beyond an articulation, and as the clavicle is separated from the acromion process by a perfect joint, I felt quite sure that if the disease had commenced in the former, it would not implicate the latter bone. Then, as the shoulder-joint moved with undiminished freedom, I felt sure that the tumour could not have acquired any intimate connection with the capsular ligament, from which, indeed, it would be separated by the bursa that lies under the deltoid muscle; so that there seemed to be no insuperable obstacle in the way of removal, while the patient's healthy aspect afforded encouragement to hope that the disease might not prove to be of such a malignant disposition as its appearance threatened. Being confirmed in these views by further observation and reflection, I proceeded to perform the operation on the 18th of March.

"An elliptical incision was made from the middle of the clavicle backwards over the most prominent part of the tumour, so as to include within its curves the portion of integument that would have proved redundant if allowed to

remain. I then reflected the flaps, and exposed the clavicle at a little distance beyond the expanded part, where I divided it by cutting-pliers. A hook being next inserted into the extremity of the bone, and consigned to an assistant, with instructions to hold it steadily upwards, I carefully divided the connections of the tumour by dissecting upon the surface—not parallel with it—so as to complete the operation without inflicting any injury on the neighbouring parts, more particularly the capsular ligament, which was, nevertheless, denuded over a large portion of its extent. The wound healed quickly under ordinary treatment, so as to be completely and soundly cicatrized on the 22d of April, when the patient was dismissed with less deformity and inconvenience than could be imagined by any one who has not seen how little disturbance results from removing the clavicle, even throughout its whole extent.

"The tumour was of a globular form, having completely expanded the clavicle to its extremity, without in the slightest degree affecting the acromion, and measured four and a half inches in one direction, by three and a half in the other."

The characters of the tumour were similar to those which are described by Mr. Paget as *cystic myeloid disease.*

Art. 98.—*A case of Strangulated Hernia obturatoria.* By Dr. Lorinser.

(*Wien Wochenschr.*, No. 3, 1857; and *Med.-Chir. Review*, July, 1857.)

As far as the author is aware, there is but one case on record (by Mr. Obré, in the 'Medico-Chirurgical Transactions,' vol. xxxiv) in which this form of hernia has been recognised during life and relieved by operation; and even in that instance, the nature of the hernia was not suspected prior to the commencement of the operation. He now relates a case which occurred to himself, the nature of which was detected, and an operation performed with success.

On July 21st, 1856, a feeble, spare woman, æt. 65, while reaching a heavy object from on high, felt as if something burst in the groin. She was seized with pain in the abdomen and vomiting, and was brought to the hospital, and as there was no appearance of a hernia, she was at first supposed to be suffering from simple peritonitis. To the other symptoms were, however, added obstinate constipation, and after a while fæcal vomiting. The author first saw her on August 1st, —*i. e.*, eleven days after the accident—when she exhibited general symptoms of the most unfavorable description. On examination, the inguinal and femoral canals were found quite free, but the triangular space formed by the adductor longus, Poupart's ligament, and the femoral vessels, was observed on the left side to be level with the surface, instead of depressed as on the right side. When the fingers were passed upwards towards the foramen ovale, a soft swelling, about the size of an egg, and sensible to pressure, was perceived behind the pectineus, stretching from the foramen ovale to the outer border of the adductor. It was placed posteriorly, and somewhat internally to the pectineus, and was yielding rather than tense, the colour and temperature of the skin covering it being normal. Upon per-

cussion, the tumour imparted a deep, full, tympanitic tone. From the vagina, a somewhat tense, very sensitive tumour could be felt at the posterior edge of the foramen ovale. All movements of the thigh caused pain. The diagnosis was much facilitated by the spareness of the woman, and by the tympanitic tone elicited by percussion over the whole circumference of the tumour.

From the duration of the strangulation, and from the full, deep, tympanitic sound, it was concluded that the intestine had become perforated and gas effused into the sac. An operation was, however, resorted to, and the pectineus being brought into view, it was slit up, somewhat obliquely, upon a grooved director, as far as the border of the adductor. Immediately behind it was found cellular tissue filled with exudation, and then the discoloured and softened sac. On opening this, a stinking fluid, partly watery, partly purulent, and containing particles of fæcal matters, flowed out. The finger was now passed into a cavity which was bounded upwards by the obturator ligament, and in a cleft at the upper part of this ligament, and in part adhering to it, lay a relaxed and collapsed portion of intestine, about the size of a walnut. Behind the intestine, at the lower angle of the cleft in the ligament, the pulsations of the obturator artery were supposed to be felt. On account of the great depth of the parts, no ocular examination of the intestine could be made. As the intestine was ruptured, and sufficient egress of the contents was secured, further division of the fibrous cleft was abstained from, in order not to endanger the separations of the recent adhesions, and consequent fæcal effusion into the abdomen. The chief care was employed to secure a free discharge of the fæcal matters, preventing them lodging in the surrounding cellular tissue. To this end the cavity of the sac was well syringed out, linen rags being then applied, and the whole covered with cold applications. A clyster of tepid water was ordered every two hours, and the diet was low.

As soon as a certain amount of fæcal matters had been discharged through the wound, all symptoms of strangulation ceased. For the first few days, the discharges of fæces were pretty frequent, rendering the repeated cleansing out of the wound requisite. The clysters were soon employed but twice a day, a small quantity of fæces being discharged per anum. As these discharges continued, and contained matters of which the patient had partaken since the operation, there seemed every probability that only one side of the intestinal noose had been strangulated, the uninjured portion keeping up the communication between the upper and lower portions of the gut. The wound gradually cleansed and diminished in size, while the woman's strength and appetite increased until the end of August, when she became the subject of bronchitis. This delayed her progress, but by November the fæcal fistula, which had long been inconsiderable, had quite closed, and she only remained longer in the hospital on account of the chest affection.

ART. 99.—*On Inflammation of the Prostate Gland.* By Dr. LEDWICH, Lecturer on Anatomy and Surgery at the Original School of Medicine, Dublin.

(*Dublin Quarterly Journal of Med. Science*, Aug., 1857.)

The symptoms attending subacute inflammation of the prostate are liable to some variety both as to number as well as intensity, being greatly influenced by the period of the disease, the moral aspect of the patient, and the previous condition of the general health. There is a more frequent desire to pass water, sometimes continuing with great intensity for a few days, and then becoming mitigated without any apparent cause. The patient complains severely of an inability to retain his urine for any length of time; uneasiness in the perinæum, amounting to burning or scalding, with occasional sharp attacks of strangury, and a desire to go to stool, accompanied by great straining in passing the last drops of urine. The urine is usually acid, depositing crystals of uric acid and shreds of mucus; but it may be intensely alkaline, becoming rapidly ammoniacal, and throwing down mucus and the phosphates in quantity. There is likewise dyspepsia, with great nervous irritation, coughing, and straining at stool, or priapism, causing a discharge of mucus, perfectly clear and transparent, from the orifice of the urethra, which, being examined microscopically, yields the following composition: 1. Morphous crystals of uric acid, or ammoniaco-magnesian phosphates. 2. Mucus-corpuscles. 3. Blood-discs. 4. Epithelium. On introducing the finger into the rectum there is tenderness; and although a full-sized catheter (No. 10) will pass with facility through the urethra, it causes the patient the most intolerable agony, often lasting for hours after the operation. The penis is sometimes painful at the glans, and the organ is hard and shrunken, as if the crura participated in the general urethral irritation. In the morning the symptoms are almost absent, but increase gradually from midday, the patient being frequently roused from sleep by scalding pain in the urethra, and irritation of the rectum, which keeps up a continual desire to strain; or, again, there may be a discharge from the urethra simulating the escape of normal secretion, but which augments rather than diminishes the prevailing irritation. After some time the symptoms become aggravated, and the patient's health suffers in proportion. He is indolent, incapable of any active exertion, either mental or bodily; his appetite fails, memory lapses, the secretions become vitiated or checked; there is headache, pain in the back on the slightest exertion, and depression of spirits, more or less marked.

The patients most prone to this affection are those who lead a sedentary life, indulge in late rising and other forms of dissipation; who take but little exercise, and that, when taken, accomplished rather to induce fatigue than to create relaxation; and when once the disease is established, the constant lapse of the patient's mind towards its seat tends not only to perpetuate the malady, aggravating the prostatic symptoms, but also complicating it with others equally

intractable as to their nature and treatment. As in all subacute diseases, one set of symptoms may predominate over others: thus, in one, the inability to retain the urine forms the principal source of complaint; in a second, the daily recurrence of perineal irritation; in a third, the urethral discharge; whilst in the most inveterate cases the mental influence creates a degree of depression more permanent than even the existence of a fatal disease. But fortunately this latter condition arises from the mistaken idea of the patient that he is the subject of a seminal affection about to eventuate in impotency; and to such an extent has this impression become rooted in the patient's mind, that it has at last induced mania, rendering a safe retreat essential, in order that moral as well as medical treatment might be put in force to remove the delusion and arrest its influence. To whatever cause the fact may be attributed, scrofulous patients, with fair skins and light complexion, of the nervous temperament, are most subject to this disease; and the author has met with it in two cases combined with chronic phthisis, which it much aggravated during its progress, and rendered intolerable towards the close of life.

An opportunity has occurred to the author, on two occasions, whereby he became acquainted with the pathology of this affection, and satisfied himself as to its true nature and locality. One case occurred at the age of 18, the second at 30; both were well-marked examples of the disease, and succumbed to phthisis, but this latter had no connection with the urethral affection. The prostato-vesical plexus was full, and many of its branches varicose; the capsule of the prostate adhered intimately to its surface, and, on slicing the gland, it seemed soft, with large, open, venous branches on the section, from which blood exuded, whilst the whole gland exhibited an augmented volume; the mucous membrane of its urethral aspect was *red, soft*, thickened, and *villous*, whilst the ducts could be distinguished with the unassisted eye; the uvula and trigone vesicæ were red and turbid, but the remainder of the bladder was healthy. He examined with some anxiety for the presence of tubercular deposit in the gland, but, although this morbid condition was often anticipated, no evidence of any such structural lesion could be detected. The seminal ducts did not present any alteration as to size, their excretory orifices being discovered with the greatest difficulty, the vesiculæ seminales being full and swollen, but without any other abnormal appearance; scrofulous tubercles existed in the epididymis, yet the testicles, although soft and small, were otherwise healthy.

From the foregoing details, it will be admitted that sufficient evidence appears to justify the assertion, that a subacute inflammation of the prostate gland really does exist, which, although without the active characters that mark the consecutive affection of gonorrhœa, is still sufficiently manifest to acquire a special pathological importance in urinary disease; nor can its obscurity as to its causation be received as any rational evidence of its innocuous tendency; for, on reflection, it becomes manifest that those diseases which generally elude immediate research are the most difficult to understand and obstinate to remove, and this difficulty is further enhanced in these

special diseases by the similarity of the symptoms attending urinary affections, and the diversity of the pathological conditions of which those symptoms may be the visible manifestation. It is, therefore, rather by a system of negative reasoning, than by the presence of positive signs or special characters, that the basis of differential diagnosis of urinary affections must be founded, in order to represent any practical value in isolating disease, and determining its causes, nature, and treatment.

Dr. Ledwich then relates some cases, of which this is one:

A gentleman, æt. 46, married, and subsequently contracted gonorrhœa, which yielded after some time to the usual treatment. He then, for two months, felt perfectly well, but gradually became affected with more frequent desire, strangury, tenesmus, mucous discharge, and prostatic tenderness. The discharge is always tinged with blood, so as to discolour the clothes. It consists of mucus, epithelium, and blood-discs, the latter being numerous and granular. Ordered, ten leeches to be applied to the perinæum, with gallic acid and extract of hyoscyamus internally. This treatment was not productive of any benefit. Anodyne enemata relieved the symptoms for a few days, but they again returned. After a long walk he had a strong desire to void urine, and he then observed that, by straining, only drops of blood were expelled. This continued during the night, and on the next day, when I saw him, he had lost about four ounces of blood. I recommended the recumbent posture, with small doses of gallic acid, sufficient to control, but not wholly to arrest the bleeding. It progressed until the third day, when it gradually ceased, and with its cessation all the other symptoms of irritation permanently subsided, so that nature accomplished the salutary change that art was unable to achieve.

The author's conclusions are—

1. That a form of subacute inflammation of the prostate gland really does exist.
2. That it differs in its causes, progress, and termination, from any previously recognised disease of the gland.
3. That all circumstances tending to produce blood determination to the pelvic organs become exciting causes of the disease.
4. That it occurs at or about the age of puberty in the majority of cases.
5. That the scrofulous diathesis predisposes to its development.
6. That it is a progressive affection, but does not proceed to disorganization.
7. That it is frequently and ignorantly confounded with spermatorrhœa, they being sometimes, but rarely, associated as independent diseases.
8. That whilst caustic aggravates the disease, it yields to tonics, sedative injections, and counter-irritation.

ART. 100.—*On the Concretions of the Prostate.* By Mr. HENRY THOMPSON, Assistant-Surgeon to University College Hospital, &c.

(*Proceedings Royal Med. and Chir. Society*, vol. i, No. 3, 1857.)

This is a sequel to a paper on the 'Anatomy and Pathology of the Adult Prostate' (*v.* 'Abstract' XXV, p. 189), also presented to the Royal Medical and Chirurgical Society.

The existence of "concretions" of microscopic size had been established in every one of the fifty specimens of the prostate exhibited. In many their size was that of a poppy-seed. They had been found also in the organ at 14 years of age. Their physical and chemical characters (the latter by rigid analysis) are given at considerable length. Their existence is concluded to be a necessary result of the performance of natural functions on the part of the prostate. After numerous observations it appeared that the formation of a concretion frequently originated in the aggregation of a yellowish matter often seen within the secreting nuclei lining the gland-ducts and pouches, often found free in yellowish granules, sometimes stuffing small ducts and follicles, and seen floating in the form of prostatic fluid as well as in the contents of the vesiculæ seminales. In the larger masses of this yellow matter, entirely occupying the interior of crypts or follicles, the small granules may be seen cohering, or as if fusing together, and presenting an appearance identical with that which is often seen existing in the centre of fully formed concretions. It was concluded that the coalescence of these yellow granules, or of the nuclei charged with them, their partial fusion into a mass more or less homogeneous, the stratification in part of this mass itself, or more probably the deposit upon its surface of fresh layers of fluid matter similar to that which originally constituted the interior, and finally, some addition of opaque earthy matter to it, either by infiltration or accretion (through irritation of the secreting membrane around, from the pressure of the newly formed body, as observed in numerous other instances referred to), were the steps by which the production of a "prostatic concretion" was very frequently accomplished, and its connection with "prostatic calculus" illustrated. The views of other observers were quoted and discussed at considerable length. Numerous drawings of these bodies in various stages of formation, as well as the original objects themselves under microscopes, illustrated the communication.

ART. 101.—*Case of Bubo* (?) *within the Abdomen.* By Mr. FURNEAUX JORDAN, Demonstrator of Anatomy at Queen's College, Birmingham.

(*Edinburgh Medical Journal*, Sept., 1857.)

Inflammation and suppuration of an external iliac or a lumbar gland occurring during an attack of primary syphilis, does not appear to have been described by any author. The case, no doubt, is some-

what obscure; at the same time it is more easy to agree with Mr. Jordan, and refer it to the category of bubo (if the term *βουβων*, the groin, may be used in this sense), than to simple peritonitis, pelvic cellulitis, or simple coincident abscess.

Case.—"Benj. H—, æt. 21, single, a nail-cutter, was admitted, September 9th, 1856, into the syphilitic wards of the Queen's Hospital, Birmingham, under the care of Mr. Knowles. On the 13th the following report was made: With the exception of an attack of gonorrhœa, twelve months ago, he has always had good health until he contracted his present attack of syphilis, from which he states he has suffered two months. He has had no medical advice previous to his admission into the hospital. Eleven days ago he first noticed pain at the lower part of the abdomen, which was combined with tenderness on pressure. At the same time he observed a slight swelling in the right groin, the disappearance of which, a few days subsequently, was followed by increased pain and tenderness, occasional sickness, and general prostration. Rigors have been frequent and severe. From the commencement of the abdominal symptoms he had diarrhœa, which ceased abruptly after a duration of ten days. The vomiting, which before had been occasional, twenty-four hours ago became incessant. Has had no sleep for several nights. At present he lies upon his back with his thighs drawn up. The abdomen is distended, tense, and exceedingly painful and tender on pressure. There is unusual fulness of the superficial veins of the right inguinal region. The skin generally is sallow, the cheeks flushed, and the features contracted. Three chancres are visible on the preputial lining near the frenum, all apparently undergoing the healing process. There is extreme prostration, and articulation is difficult. There is no pain in the head, and the special senses are unimpaired. The pulse is 115, hard, contracted, and incompressible. The heart sounds are normal. The cardiac impulse, however, is greatly augmented. The pulmonary phenomena are unimpaired. The tongue is covered with a thick black crust. The skin is hot and dry. Urine natural.

"To make a daily report of the case would be a diurnal history of increased prostration to its *finale*—death. The vomiting was most intense, and for two days before death assumed a stercoraceous character. Dr. Heslop was asked by the surgeon to see the case, and all remedial means were adopted. The vomiting was distinctly relieved, on several occasions, by a simple means, which it is worth while to notice here, as Dr. Heslop, to whom it was communicated by a practitioner in the neighbourhood, has found it to succeed in allaying urgent vomiting when all other means have failed. A dozen drops of chloroform were given in a table-spoonful of milk every second hour when the vomiting was unusually severe. Death occurred on the 30th of the same month.

"*Thirty hours after death.*—Body much emaciated. Rigor mortis present. A few ecchymosed leech-bites are visible at the front and upper part of the right thigh, immediately beneath Poupart's ligament. The cranial and thoracic viscera presented no appearances inconsistent with health. On turning aside the parietes of the abdomen, the viscera in the lower half of that cavity were found to be covered with layers of lymph. This condition was more especially pronounced in the right iliac fossa and in the hypogastric region, so that in these sites knuckles of intestine were bound together in almost solid bundles, by bands and patches of lymph. In the cavity of the true pelvis, this condition afforded resistance, as of a tumour, to the injection-tube or finger introduced into the rectum. In the right iliac fossa, the intestinal folds were not only glued together, but were glued also to the an-

terior wall of an abscess, which, on being turned aside, was discovered in the region in question. The abscess just referred to had a thin, gray, imperfect cyst wall. It extended over the greater portion of the iliac fossa. Its lower limit was three quarters of an inch from Poupart's ligament; internally it was bounded in its lower half by the external iliac artery, being two or three lines distant from that vessel, the inner margin above was about a similar distance from the tips of the transverse process of the lumbar vertebræ. It was carefully ascertained that every portion of the osseous vertebral column was intact. Externally the abscess reached to within two inches of the crest of the ilium, and upwards two inches and a half above the iliac crest, at which part its lateral extent corresponds to the breadth of the quadratus lumborum muscle, with the fibres of which it was in contact. Anteriorly, the outer wall of the abscess was formed of a greatly thickened peritoneum; posteriorly the feebly organized cyst wall might be scraped easily from the muscular fibre of the iliacus below and the quadratus lumborum above. Running obliquely across the cavity, and altogether isolated in the purulent fluid, was the external cutaneous nerve in its progress from the lumbar plexus to the anterior superior spinous process. In the upper part of the anterior wall, though not isolated, was the ilio-inguinal nerve, passing more directly outwards from its lumbar origin. At the inner margin of the abscess, one inch and a half behind Poupart's ligament, *one* large lymphatic gland formed part of the wall of the cyst, the centre of the gland being entirely destroyed, with a considerable portion of the general structure, so that a hollow hemisphere only was left with ragged edges looking towards the abscess already described. Those portions of the small intestine, which lay in the right iliac fossa were highly congested at their interior; and although the bundle was so glued together that the transmission of any contained matter was next to impossible, yet no portion of the canal was completely impervious. The coats of the rectum were greatly thickened. Inspection of the penis showed cicatrices of the chancres above described. There was no enlargement of any gland in the groin.

Art 102.—*On the relief of Paraphymosis.* By the late Mr. Abraham Colles, Professor of Surgery in the Royal College of Surgeons of Ireland.

(*Dublin Quarterly Journal of Medical Science,* May, 1857.)

The two following cases are selected, among many others, from the unpublished writings of the late Professor Colles, by his son, Mr. Wm. Colles.

Case 1.—January 24th, 1814.—A young lad, æt. 15, had drawn back the prepuce on Thursday, and it remained so till Monday evening. I made two or three ineffectual attempts at reduction by force; then tried by reducing the base of the glans to reduce its size; but I here also failed. I now thought I should have to divide it, and proceeded to the operation. On passing the director under the stricture, it struck me I might raise the skin, and depress the base of the glans. Passing the point of the instrument under the prepuce, at the right side, I raised it up, so as to be able to catch the skin between the finger and thumb; then, passing the director to the left side, I found that in its progress it raised up the skin, and brought it forward over the glans, and the reduction was effected without force.

Case 2.—January 10th, 1815.—A man with paraphymosis applied; it had

occurred three or four days ago, and prevented his having any sleep for the last three nights. Immediately after connection he endeavoured to draw forward the prepuce, but could not succeed. The stricture is at some distance behind the corona glandis, and is very tight; the line of stricture is ulcerated, and of a blackish colour; the skin, both before and behind the stricture, is much swollen. This appeared a very bad case, but was reduced with great facility.

I made the patient lie on the floor, on his back, and, kneeling at his right side, I passed the silver director under the stricture towards the right side, and, while the point lay under the stricture, I pressed down the swollen part of the prepuce and corona glandis with the stalk of the instrument; then, pressing this portion backward, I found it was easily pushed back beyond the stricture. In this manner, passing the director from the right to the left side, I quickly succeeded in removing the paraphymosis.

I think an instrument might with advantage be employed in such cases, somewhat of the shape of a shoehorn, only not much hollowed on the surface which is to be applied to the glans penis.

ART. 103.—*The probe-pointed Catheter for extremely narrow Strictures.* By Mr. HENRY THOMPSON, Assistant-Surgeon to University College Hospital, &c.

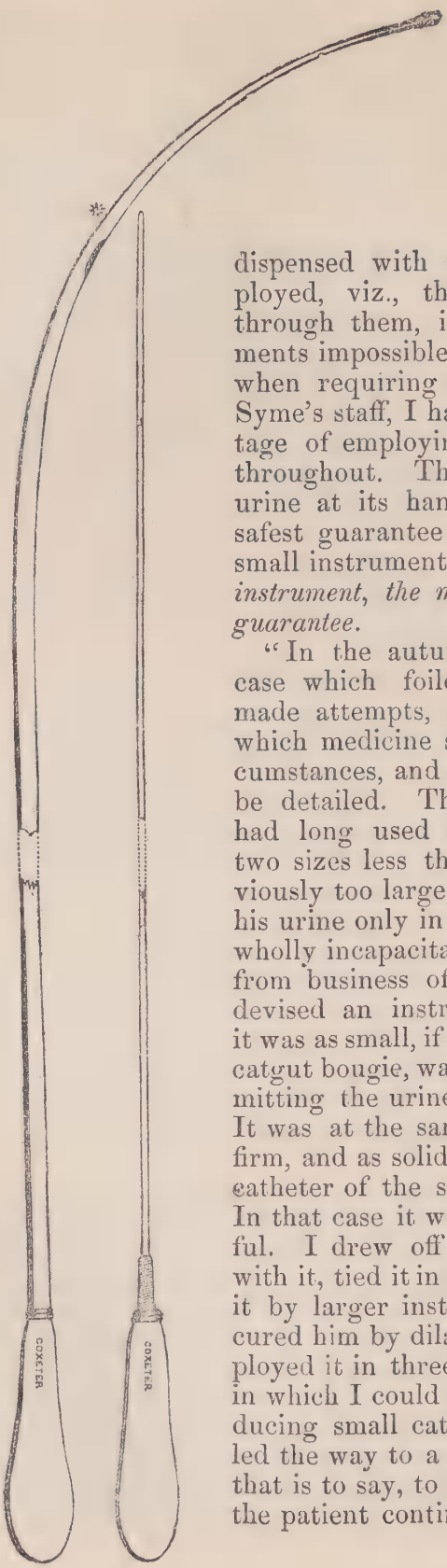
(*Lancet*, June 20, 1857.)

"There is," says the author, "no axiom more true or more important in relation to the employment of sounds and catheters in the urethra than this, viz., that danger increases in an inverse ratio to the magnitude of the instrument. In other words, the smaller the catheter, the greater the probability of injuring the canal. It is impossible to lay too much stress on this fact, or to impress too strongly its importance upon the student before he commences his practical acquaintance with catheterism on the living.

"But, on the other hand, it is not to be denied that there are some few cases of stricture in which the contracted part has become so narrow that no ordinary catheter will pass through it. I have verified this fact on the dead subject, where, neither inflammation nor spasm existing, the organic obstruction remains simple and uncomplicated; and, in common with others, I have occasionally found a stricture in such circumstances so narrow, that the finest probe only could be insinuated through it.

"Such cases as these long resist the most patiently and carefully made efforts during life, and, despite of all the adjuncts which medicine, regimen, and diet afford, valuable as they are in all cases of difficulty, do occasionally long hold out against the surgeon.

"These instances are very rare. But I am inclined to believe that the secret of success *for them*, all other means failing, is to use a sufficiently small instrument. It is unquestioned that there are some strictures so narrow that a catheter of the smallest size, slender as it is, will not pass them, nor indeed any instrument which is not some degree smaller. Hence the employment of catgut and elastic bougies of extreme tenuity. Such are necessarily, however, very unreliable instruments, from the impossibility of commanding them in their pro-



The left of the two figures is the "probe-pointed catheter." The eye is seen below the asterisk, which marks the point at which the channel ceases. From the asterisk to its termination, the instrument is solid.

The right-hand figure represents the steel stilet which screws into the catheter, and fills its interior.

gress along the urethra, or of even knowing where they go. At all events, that most satisfactory test of success, which should never be dispensed with when it can be employed, viz., the outflow of urine through them, is with such instruments impossible. Hence it is, then, when requiring the smallest size of Syme's staff, I have found the advantage of employing one with a bore throughout. The appearance of the urine at its handle is the best and safest guarantee of the position of a small instrument; and *the smaller the instrument, the more necessary is the guarantee.*

"In the autumn of 1855 I had a case which foiled several carefully made attempts, aided by the means which medicine suggests in such circumstances, and which need not here be detailed. The catheters which I had long used for such cases, viz., two sizes less than No. 1, were obviously too large. The patient passed his urine only in small drops, and was wholly incapacitated by his complaint from business of any kind. I then devised an instrument, which, while it was as small, if not smaller, than any catgut bougie, was also capable of permitting the urine to flow through it. It was at the same time as strong, as firm, and as solid in the hand as any catheter of the size of No. 2 at least. In that case it was perfectly successful. I drew off the patient's urine with it, tied it in his bladder, replaced it by larger instruments, and finally cured him by dilatation. I have employed it in three similar cases since, in which I could not succeed in introducing small catheters, and in all it led the way to a cure by dilatation; that is to say, to a condition in which the patient continues free from every

symptom of complaint or annoyance by occasionally passing for himself an instrument varying in size from No. 8 to No. 10.

"One of these patients, to whose stricture this instrument was the key, had, after repeated failures in London, tried the resources of Paris without success, no one having before succeeded in introducing an instrument into the bladder. That gentleman now enjoys, after twenty years of suffering, excellent health, passing for himself at present a No. 9 catheter once a week.

"The instrument, which is made of silver, will be seen, by reference to the subjoined engraving, to have nearly the form of a catheter. Its last two inches, however, are made perfectly solid. This extremity can therefore be made of any size or form desired, these not being limited by the necessity for a channel inside. However small it may be necessary to use an instrument in any given case, so small can this probe-pointed extremity be constructed. At about two inches and a half from the end the channel begins, and the small eye is placed, the instrument increasing in size first to that of a No. 1, and then to nearly that of No. 2, which is continued throughout the entire shaft. Finally, the whole is strengthened by a small steel rod or stilet, which accurately fills the interior, and to which the handle is attached. The small eye cannot therefore be blocked up with mucus or other matters. Moreover, this rod screws in, and gives to the instrument the most perfect solidity. Having succeeded in passing the stricture, it is carefully insinuated a little further, when, on unscrewing the handle, the urine will issue from the external orifice, by drops only, it is true, on account of the smallness of the internal orifice, but in a manner which in time relieves the patient, while it assures the operator of his complete success. It may be called 'the probe-pointed catheter.' It is needless to add, that the utmost care and lightness of hand are absolutely necessary in the management of so small an instrument; and any deviation from such practice is extremely hazardous. Certainly its use cannot be recommended to beginners, or to those who are not well accustomed to the use of instruments in the urethra.

"I may add, that the handle *being removed with the stilet*, it is easy to screw in its place a small steel rod, and slide over it a fine gum-elastic tube, made of silk, into the bladder, if desired, after the solid instrument has been retained a few hours, thus ensuring the absence of difficulty in reaching the bladder a second time, a method of proceeding which Mr. Wakley has done much to introduce into practice. In many hands, such a plan would be the safest and most desirable. Further, the small instrument should not be retained longer than is necessary to facilitate the introduction of the second. This plan being employed for the first step, if preferred, the remaining treatment may be conducted in any manner which the circumstances of the case appear to indicate."

Art. 104.—*The treatment of Hydrocele by Substitution.* By Dr. Burggraave.

(*Journ. de Méd. de Bordeaux*, Sept., 1857; and *Dublin Med. Press*, Oct. 21, 1857.)

The author has brought before the Society of Medicine of Ghent a new mode of treating hydrocele, which he terms *by substitution*, and which consists in substituting a hydrocele by diffusion for the hydrocele by effusion. He has already tried this method a dozen times with success.

It consists in making in the tumour a certain number of punctures with an acupuncture needle; a serous thrombus is immediately formed, and at the end of half an hour all the serum has been transferred to the areolar tissue of the dartos, where it is quickly absorbed. The absorption is promoted by means of iodine, either by rubbing in the ointment, or by painting with a watery solution of iodine and iodide of potassium.

The author believes that a radical cure is thus obtained, because the patients operated on have not returned after more than two months. At all events, the operation is harmless, and may be repeated if required.

What justifies us in allowing the possibility of radical cure by this method is, that to obtain such a cure, it is not necessary, as was long believed to be the case, to produce plastic inflammation and adhesion of the laminæ of the tunica vaginalis.

(c) concerning the upper extremity.

Art. 105.—*On the treatment of Wounds of the Palmar Arch by forced flexion of the Arm.* By Mr. J. Giles.

(*Proceedings of the Royal Med. and Chir. Society*, vol. i, No. 3, 1857.)

Wounds of the palmar arches have the reputation of being among the most troublesome of injuries involving hæmorrhage with which the surgeon has to deal. The application of pressure to the palm of the hand generally causes considerable infiltration, swelling, and tenderness; and is also frequently unsuccessful, hæmorrhage being apt to recur after a few days under more disadvantageous circumstances than at first. The usual plan of applying the ligature at the seat of injury is frequently difficult or impossible in a part where the vessels lie so deep among aponeurotic, tendinous, and nervous structures, as in the palm of the hand. The application of the ligature in the forearm is attended with the disadvantage that the obliteration of one artery is often not sufficient, and, even when both the radial and ulnar have been tied, the hæmorrhage is still frequently kept up by means of the interosseous artery. Ligature of the brachial artery is therefore sometimes had recourse to; and even this apparently extreme measure is not always successful, as is illustrated by a case recorded

by Mr. Skey ('Lancet,' June 2d, 1855), in which the radial, ulnar, brachial, and axillary arteries were successively tied. Upon the removal of the last ligature, hæmorrhage again recurred, and was only ultimately arrested by very firm bandaging of the whole of the limb, at the risk of inducing gangrene.

Though all cases are not of this formidable character, still a method of treatment which should have the advantage of checking the hæmorrhage without either severe local pressure or ligature of vessels is a desideratum in the management of these cases. This advantage seems to be possessed by the plan of flexing the forearm upon the arm with sufficient force to arrest the bleeding, and maintaining it in that position so long as may be necessary.

This plan was proposed by M. Durrwell ('L'Union Médicale,' tome iii, No. 86, p. 341), who adopted this method of treatment in the case of a woman who fell from a ladder and cut her hand with a broken bottle. The arm was flexed forcibly, but not sufficiently to cause pain. A pad was placed upon each of the two arteries of the forearm. On the third day, the arm being released from its position, bleeding returned. The position was renewed, with the effect of entirely controlling the bleeding, and maintained until cicatrization had occurred. Simple dressing was applied to the wound throughout. M. Durrwell lays down the principle that "in the greater number of arterial lesions of the forearm and of the leg, forced flexion, continuously used, will supersede the ligature."

Dr. Toogood, in his 'Reminiscences of a Medical Life,' states that he has "seen this practice successful in a wound of the forearm, accompanied with profuse hæmorrhage, the source of which was rendered uncertain from the swollen and altered state of the limb; and the same practice may probably be adopted in some wounds of the lower extremities." In another part of the same work, however, Dr. Toogood relates a case in which this plan seems to have failed. The case, which occurred under the care of Mr. Alford, surgeon to the Taunton Hospital, was that of a man who wounded the palm of the right hand, rather to the carpal side of the middle, with some glass, on July 6th, 1853. The bleeding was restrained by compresses over the wound and over the radial and ulnar arteries. Bleeding continued to recur at intervals, and to be checked by the same means, until August 4th, when it returned very freely. Forced flexion was now had recourse to, which succeeded for a time, but any movement of the fingers caused a return of the bleeding. On August 6th, an incision was made in the palm, and three ligatures applied, which measure proved successful. In this case the forced flexion was not applied till nearly a month after the injury. The following case occurred at the London Hospital, under the care of Mr. Luke:

Case 1.—A girl, æt. 14, on July 13th, 1855, received a wound a little to the radial side of the left palm, from the fragment of a broken vessel. The bleeding, which had been considerable, had ceased at the time of her admission, and compresses were applied. At the end of three days the pressure caused so much pain that the dressing was changed. This was followed by hæmorrhage, which was checked by pressure and cold water. In two days active bleeding again came on. Forcible flexion was now had recourse to,

at my suggestion. This completely checked the bleeding. In two days the bandages were a little relaxed, but, as bleeding freely recurred, they were again tightened. The flexion was discontinued five days after its first application. The wound was now suppurating healthily. A slight compress of lint, with water dressing, had been kept on the wound during the treatment. Unfortunately, some irritation had been produced in the fold of the elbow, causing a slough. This was followed by contraction of the arm which was met by gradual extension on a splint. In this case the flexion was not had recourse to until five days after the injury, when the arm had become swollen and irritable. This, together with the circumstance of the flexion having been relaxed somewhat too soon, thereby necessitating a longer continuance of it, may account in some measure for the sloughing.

I am indebted to Mr. Robert Debenham, late house-surgeon to the London Hospital, for the particulars of the following case:

Case 2.—A man, æt. 24, was admitted, December 27th, 1856, under Mr. Curling. Besides a stab in the side, there was a punctured wound, three fourths of an inch in length, on the anterior surface of the left wrist, and extending into the palm. There was active arterial hæmorrhage. A compress was placed on the wound, and one on each of the arteries at the wrist, and the whole limb was firmly bandaged from the tips of the fingers to the elbow.

28th.—Bleeding came on very suddenly and freely. The arm was forcibly flexed, without altering the bandages. This quite controlled the bleeding. The position of the arm, however, caused considerable uneasiness. The forced flexion was discontinued December 31st. The wound healed in the course of a few days.

Case 3.—A boy was admitted into the London Hospital in February, 1857, with a wound of the superficial palmar arch, under the care of Mr. Luke. In this case Mr. Jenkins, the house-surgeon, with the view of trying the efficacy of forcible flexion, quite unassisted by any other means, used no pressure whatever upon the palm. The bleeding was completely controlled, but, upon releasing the arm from its position, a pulsating tumour was found in the palm. This was treated by pressure, but in two or three days hæmorrhage recurred. Forcible flexion was again used, accompanied by pressure at the palm. This was found to control the pulsation in the tumour, and was continued until the integuments in the fold of the elbow began to show symptoms of irritation. The position was then relaxed, and for a day or two longer pressure was applied upon the palm and upon the arteries at the wrist. At the end of this time the pulsating tumour was quite abolished.

The cases above recorded seem to warrant the expectation that the plan of forcible flexion will be found to be generally applicable in cases of wounds of the palm, and also of wounds of the forearm in which, from any cause, the ligature cannot be applied at the seat of injury. Including the case recorded by M. Durrweil, and the two mentioned by Dr. Toogood, six cases have been above adduced in which this treatment was adopted. Of these six cases one only was unsuccessful, and in this case the plan was not adopted until nearly a month after the injury. Of the five successful cases we have two in which some ill consequence ensued after this mode of treatment. In one of these sloughing occurred in the fold of the elbow, in the other a spurious aneurism was produced in the palm. The former, of course, can

alone be in any way attributable to the treatment by forced flexion, and this consequence might probably be readily avoided by applying the flexion at the outset, by avoiding a premature relaxation of the position, which involves the necessity of commencing over again, and by taking care that there is no fold of a bandage or other source of irritation in the fold of the elbow.

A moderate degree of pressure upon the palm would probably prevent the formation of a pulsating tumour.

Whilst speaking of the manner in which the forcible flexion should be used, I may mention that several people, whose arms I have placed in this position for purposes of experiment, agree in stating that the flexion can be more easily borne when the forearm is in a condition of semi-pronation, *i. e.*, with the palm looking towards the opposite side. Others find little difference in this respect. This method of placing the arm has the advantage of allowing the palm to be dressed without altering the position. Out of the above six cases there is only one in which the forcible flexion is stated to have caused much uneasiness.

Mr. Giles thinks that this mode of treatment may arrest the bleeding, partly by the pressure of the muscles of the arm upon the arteries proceeding to the hand, and partly to the arteries being bent upon themselves at an acute angle, and in that manner rendered impervious.

Art. 106.—*On the treatment of some Injuries to the Hands.* By Mr. Birkett, Surgeon to Guy's Hospital.

(*Lancet*, Oct. 31, 1857.)

The main object of this paper (which was read before the Medical Society of London, October 24th, 1857), was to illustrate the bad effects of applying adhesive plaster to wounds and injuries of the hands, and to recommend the treatment of these cases by the use of slips of lint, kept constantly wet by means of an instrument called an "irrigator," placed at the head of the patient's bed. Several practical illustrations of this mode of treatment were given, it being especially advocated in every kind of injury of the hand or fingers, except the purely incised wound inflicted with a sharp cutting instrument. In such, the careful adjustment of the lips of the wound with adhesive plaster may be admissible. In other injuries complicated with wounds, the author's experience induced him to recommend the thorough cleansing of the hand by soaking in lukewarm water, and narrow strips of linen or lint wetted in tepid water to be lightly applied around the injured fingers, commencing from their ungual phalanges. When severe lacerations of the hand or palm are present, they are to be treated by pieces of lint with a slit in them, the arm to be supported and raised upon a pillow, and irrigation used. A drawing of the irrigator employed in Guy's Hospital was exhibited, and its advantages pointed out. The following is a classification of the injuries to which the treatment described is especially adapted:

1. All incised and lacerated wounds of the integuments.

2. The same wounds complicated with similar injuries of the muscles or tendons.

3. Incised and lacerated wounds by which the joints are cut open.

4. Compound fractures of the bones of the metacarpus and phalanges with severe contusion, and those accidents by which one or more of the fingers are torn off by machinery, leaving—as in the case of the thumb, for example—more or less of the bone of that important organ exposed without any covering of soft parts.

5. Injuries produced by the explosion of gunpowder from fire-arms, with or without shot, by the force of which the soft parts are more or less lacerated, contused, and destroyed, and the bones fractured.

(D) CONCERNING THE INFERIOR EXTREMITY.

ART. 107.—*A new mode of employing Counter-Extension in Fractures of the Thigh.* By Dr. HENRY HARTSHORNE.

(*Transactions of the College of Physicians of Philadelphia*, vol. ii, No. 9, 1855.)

The essential idea of this apparatus appears to have originated with Dr. Joseph Hartshorne. The object is to save the perinæum, and this would seem to be gained very effectually,—the difference between this apparatus and that in general use, being, to use the words of the author, "exactly that which exists between riding upon a *saddle* and upon a *rope*."

"It is true," says Dr. Hartshorne, "that the *chief* difficulty, with regard to excoriation, has been at the ankle; and that this has been removed by the use of adhesive plaster for the extension, in the manner employed by Dr. Ellerslie Wallace of this city, and by Dr. Gross, and now adopted in the Pennsylvania Hospital. But, in many cases, there is also much trouble with the perinæum; and no method has yet been devised, by which the adhesive plasters alone may be used for counter-extension. In all the forms of apparatus in use, there is a constant compromise between the effort to *extend the limb*, and the endeavour to *preserve the skin*. One of these ends is incessantly sacrificed more or less to the other. In Desault's splints, this is evidently so to such an extent that, if daily removal of the dressings and friction of the parts be not practised, excoriation may very probably occur, and defeat the extension. This *frequent disturbance* of a fractured limb must, of course, be objectionable in every way.

"In the employment of the modification of Boyer's splints, which has the name of Hartshorne's apparatus, in which a pad or crutch is substituted for the perineal band, the same difficulty occurs, although to a less extent.

"Jarvis's adjuster, when applied to a fracture of the thigh, will, as was fully shown in the case of the lady above alluded to, produce excoriation, both in the perinæum and above the knee, as soon as any

other; while the greater power under our control renders the liability to this accident still greater.

"It will be hardly too much to say, as to Hagedorn's apparatus, that, without the elongation of the splints to the axillæ, as modified by Professor Gibson, the counter-extension is not at all reliable, on account of the movement of the pelvis toward the injured side; while, if we use the elongated splints, the confinement of the position, with both limbs and the trunk under restraint, must be unbearably irksome.

"What is yet needed, then? Evidently, to have the counter-extension applied to a part which is adapted and accustomed to pressure.

"No part of the body is so particularly adapted to pressure as the region of the *tuberosity of the ischium*. With regard to firmness of pressure upon this part, an illustration may be drawn from the stop or wedge used upon railroad inclined planes, to arrest the descent of cars from accident, consisting of a short inclined plane.

"For perfect security, in this case, it may be perceived that the short inclined plane should have an inclination perpendicular to the line of impulsion of the body to be arrested. This line is a diagonal between two forces; the force of gravitation, perpendicular to the earth, and the force of impetus in descent of the car, or of extension in the limb. This force of extension, in the case of a fractured thigh under treatment, acting in the line of the limb, that is, horizontally, and the force of gravity being exerted in a perpendicular direction, a diagonal between these will be at an angle of 45° with the bed. A plane to which this diagonal is perpendicular, that is, one whose angles with the bed are 135° and 45°, will afford the requisite firmness for resistance in the counter-extension of the thigh. It will be impossible for the pelvis to slide over it, so long as no force is used except that of gravity and that of the extension in the axis of the limb.

"Having constructed a block, then, upon this idea, a *lateral* concavity may be made in it without altering the direction of its pressure, to adapt it to the form of the seat. It thus resembles a portion of a saddle, or a privy-seat. Its height may be two and a half or three inches; its width, seven or eight. A *socket* may also be scooped out for the reception of the tuber ischii, although the necessity of this is questionable. In a trial upon his own person, in which a force of 200 pounds pressure was exerted upon the block by a muscular man, Dr. Hartshorne has convinced himself that a very much greater amount of pressure can be sustained in this way, than could possibly be endured upon the perinæum. The difference is exactly that which exists between riding upon a *saddle* and upon a *rope*.

"It is necessary, then, only to cut away that portion of the block which might incommode the patient in defecation, and to fix it firmly between two splints, resembling those of Desault. At the lower end of these may be placed a foot-board, connecting the splints, for the purposes of extension. It is well to add, also, what is believed to be the best method of commanding extension: by fastening the ends of the adhesive strips, or tapes, to a *cylindrical roller*, hung between the splints.

"This may then be controlled by a handle, in the manner of a windlass, being prevented from returning by the insertion of a pin or catch, through any one of a series of holes in the outer splint.

"The only *à priori* objection which has been suggested to the above mode of counter-extension is, the supposed possibility of the patient lifting himself, so that the pelvis will ride over the block. This is evidently impossible without a strong voluntary effort, or one made during sleep or in delirium. The socket for the tuber ischii would act as a lock or latch, much increasing the security against such an escape. But a further protection may be readily obtained, in two ways:

"First, let a horizontal slit be made near the upper end and edge of the inner, and the opposite portion of the outer splint, of about six inches in length; through these slits and over the thigh, as well as around under the splints and limb, let there be passed a broad bandage, or splint-cloth, with its ends torn into four or five tails, of several inches in length, so as to tie in as many knots. This will effectually secure the thigh from rising so as to remove or lessen the counter-extension.

"Secondly, we may also use *adhesive plaster* to aid in this security, by fastening a wide piece of it underneath the block, and bringing it up over its concave surface; the warmth of the body will cause it to adhere, and make it altogether impossible for the pelvis to rise without carrying the block with it.

"By adding a wide junk-bag filled with bran, to lie under the whole length of the limb below the block, and two smaller ones, like those used with Desault's splints, to lie upon the sides—we have the apparatus complete.

"The mode of fastening the upper ends of the splints to the sides of the block, may be much a matter of choice. It is unnecessary to occupy time or space with a description of the simple arrangement used in the model exhibited. It is well, however, to have the outer splint removable.

"In compound fractures, of course, it will be better to have a complete box made, by affixing a bottom between the two splints through their whole length.

"The same means of counter-extension precisely, may, of course, be equally well adapted to the treatment of fractures of the *leg* requiring extension. It is not impossible, even, that, with some modification, the counter-extending block, or pelvic crutch, may be used instead of the perineal band in treatment of *luxations* of the femur. A glance at the skeleton, or an exploration of the ischio-gluteal region of the body in the recumbent posture, will show to any one the amount of *purchase* there at our command.

"With regard to the novelty of the above method of counter-extension, Dr. Hartshorne has found nothing bearing any resemblance to it, unless it be a contrivance of M. Bonnet, of the 'Ecole de Médecine at Lyons.* This consists of a *wire-work* shaped to fit the limb, which rests upon it. But it does not appear, either from the text or

* 'Maladies des Articulations.'

the plates of M. Bonnet's work, that any considerable force of counter-extension could be applied by its means; it being used chiefly for fractures of the *neck* of the femur, and for sub-luxation in coxalgia. The difficulty of its construction, also, is in the way of the use of such an apparatus.

"*Metallic* 'gouttières,' or troughs, were used by A. Paré in treatment of fractures of the leg; afterward by Ravaton, and particularly by M. Mayor, of Lausanne. But in none of them does there appear to be an arrangement of a sort adapted to fractures with decided shortening of the limb."

ART. 108.—*On the treatment of Hydrarthrosis of the Knee-joint by Iodine Injections.* By Dr. ROBERT MACDONNELL, Surgeon to St. Patrick's Hospital, Montreal.

(*Montreal Monthly Journal*, June, 1857.)

This practice, though strongly recommended by Bonnet, of Lyons, (who introdueed it), Velpeau, Jobert, and other French surgeons, has met with no advocates among British surgeons. Indeed, it has been strongly objected to. There is no doubt, however, as to the benefit resulting from this practice in certain cases, and we are glad, therefore, to have additional evidence on the subject. Dr. Macdonnell, it appears, has treated successfully five cases of hydrarthrosis of the knee-joint by this method, and of these he now gives three, which occurred in his public hospital practice.

CASE 1.—A. P—, a cooper by trade, æt. 26, consulted me, April 11th, 1853, on account of an affection of the right knee-joint of four years' duration. He was a thin, middle-sized man, without any marks of scrofula about him, of dark complexion, and bilious temperament. He stated that the present disease began four years before, with pain in the right knee, which gradually increased, and was soon followed by perceptible swelling of the joint, and these symptoms becoming daily more distressing, he consulted several surgeons of this city, and adopted various remedies recommended by his friends, without benefit. For a year before I saw him, he was unable to work at his trade and could not walk, except with the aid of a crutch and cane. It is unnecessary to detail the various plans of treatment that had been pursued; suffice it to say, that the joint bore evidence of all the usual remedies for chronic synovitis having been employed. On examination, I found the joint much enlarged, being four inches greater in circumference than the opposite one; but this enlargement was not so perceptible in the joint itself as in the circumference of the thigh immediately above the patella, where there was a large oval-shaped swelling extending along the outer side of the tendon of the rectus femoris, to a distance of nearly five inches, and communicating under that tendon, with another swelling, of a similar shape, but much smaller, on the inner side of the thigh. At each side of the ligamentum patellæ there were small tumours which fluctuated and communicated with those above, giving to the joint the *bosselé* appearance so well described by Bonnet. The integument was not discoloured except from the effects of previous treatment; there were no enlarged or tortuous veins on the surface of the tumours; pain at the lower edge of the patella and inner side of the knee increasing at night, or after attempts at walking, was complained of. When

at rest, the leg was usually flexed, and then the joint presented a more globular form than when the leg was fully extended, the patella appeared on the summit of the swelling, but when extension was made, the tendon of the rectus, the patella and ligamentum patellæ appeared depressed, and the tumours already described became better developed. There was no emaciation of the leg or thigh.

Being satisfied that the ordinary plan of treatment would not succeed, I determined to puncture the joint and let out its contents, as from the great size of the swelling, I was anxious to reserve the injection of the sac until it had become somewhat diminished, in the event of its filling again after puncture. Assisted by Dr. Jones, Surgeon to the Montreal General Hospital, I tapped the outer and larger tumour with a small hydrocele trocar, taking care to make the puncture at the part most remote from the joint, and drew off a large bowlful of fluid, of a straw colour, and closely resembling the contents of a hydrocele. The reader may conceive the quantity of fluid contained in the sac, when he is informed that I brought away, for chemical and microscopic examination, the full of a Forence oil-flask, besides what was spilt and left at the patient's residence. The operation produced no inconvenience, adhesive plaster was put over the aperture, and the joint bound up in a wet bandage, another wet bandage was carried from the ankle to a distance above the knee, a padded splint was placed under the knee, and so fixed above and below, as to prevent the least motion in the joint. Small doses of tartar emetic were administered, low diet prescribed, and directions given that the bandages should be kept moist with luke-warm water.

It is unnecessary to detail the daily symptoms. For the first twenty-four hours there was no pain complained of, and the patient appeared very comfortable, but on the second day, the joint began to swell, and I was obliged to loosen the bandage slightly. The swelling increased gradually, but without any increase of suffering, for the next ten days. I now determined to avail myself of the reduced size of the hydrops, to puncture it again, and inject the sac with iodine, which I did on the twelfth day from the first operation. This was done in the following manner. The leg being extended, a wet bandage was placed round the lower part of the knee joint, and carried up to a level with the upper edge of the patella. It was given in charge to an assistant with directions to draw tightly upon it, whilst the fluid flowed through the canula. By this means the contents of the lower part of the synovial sac were pushed up into the pouch above the level of the articulation, making the upper tumour more full and tense, and serving to protect the articulating surfaces from the first effects of the injection. When the fluid was drawn off, about *two drachms of the strongest tincture of iodine with an equal quantity of luke-warm water* were injected through the canula, and allowed to remain; care being taken, by changing the position of the joint, and manipulating the sac, that it should come in contact with the whole inner surface of the synovial membrane lying in front of the femur.

The wet bandage was now carried round the limb, to a distance of six inches above the patella, and moderate and equable pressure was thereby exercised upon the point. A long padded splint was applied, and perfect rest of the joint thus secured. The patient complained next day of severe pain, but not so great as to oblige me to remove the bandages. An opiate was given for the first three nights, and after that, the patient felt so well, that he left his bed on the fourth day, and I ceased to attend him at the end of three weeks. I have not seen him since, though I hear frequently of him. He soon returned to his trade, and has worked at it for the last four years without any return of the disease. For some time after the operation,

the affected limb remained weak, and yielded in walking, but his friends assure me he is now quite well, and walks without the least lameness. At his recommendation the patient whose case immediately follows, was sent to me by a Society that had supported him for the last two years.

Case 2.—A. C., æt. 40, cooper, a dark complexioned man of slender make and unhealthy appearance, consulted me under the following circumstances. For the last *four* years he had suffered from an affection of the left knee joint, which had rendered him unable to earn his livelihood for two years past, since which period he has been supported by a charitable institution in this city. He states that he has been treated by *thirteen* medical men, and his knee joint bears marks of frequent cupping, moxas, issues, and pustulating liniments and ointments. He has been blistered several times, and has taken a great deal of medicine internally. The usual quack nostrums resorted to, by persons of his rank, when they have in vain sought relief from scientific surgery, have also been tried in succession, and so convinced was he that it was useless to attempt anything further, that he had abandoned all hope of recovery, when he heard of the patient whose case has been described. It is unnecessary to detail at great length the symptoms he complained of, but in a few particulars his case differed from the former one. *The leg and thigh were much emaciated*, the swelling was greatest on the *inner* side of knee joint and the corresponding side of the patella, and though the joint appeared much larger than the other, it was only two inches greater in circumference. The patella was pushed forward very much, and on examining the inner side of the joint, the crackling sensations spoken of by authors were easily detected. The leg was flexed, and extension caused pain. During the day he suffered less than at night. I advised him to enter St. Patrick's Hospital, where I operated on him, on the 13th April, 1857, being assisted by my colleagues Drs. David and Howard.

The puncture and injection were performed precisely as in the former case, and the same precautions taken to have the joint firmly bandaged from below. I need not fatigue the reader with the daily details of the case; for, truth to say, nothing worthy of note occurred. There was no swelling or pain in the joint, no fever, no uneasiness whatever; and though my directions were very explicit that he should not attempt to move the joint, yet I had great difficulty in persuading him to remain quiet in bed. The wet bandage was continued for ten days; then a dry one was kept applied for a few days; and finally, the knee joint was put up in a starched bandage, and gentle use of the limb permitted. From the beginning till the end of the treatment, there was not a single symptom present to cause one moment's anxiety.

Case 3.—This case, also witnessed by my colleagues, Drs. David and Howard, is still more encouraging; for, though the operation was performed under very unfavorable circumstances, yet the perfect success of the treatment must do much to remove the prejudice that exists against it.

A dark complexioned, middle-sized man, æt. 25, a carriage-maker, who had come from the United States to consult me, presented the following appearance: the right eye was prominent, owing to caries of the malar bone which had left a deep depression, corresponding to its orbital portion; the nose was depressed slightly in the centre, from the destruction of both lachrymal bones, with corresponding parts of the nasal and superior maxillary bones. The surface of the body was marked with scars, the results of former ulcerations; and from the carious bones of the nose fetid discharge was taking place, and the two holes above the diseased lachrymal bones were filled up with pledgets of charpie; a most offensive fetor was exhaled from his nose and mouth. In addition to the above diseases, he presented a well-

marked hydrarthrosis of the left knee, of *seven* years' duration, which had been so distressing for the last two years that he had been almost unable to put the foot to the ground. For the first year, he says, he was able to keep down the disease by rest, counter-irritation, and internal remedies. For the next three years, he was able to walk about with the aid of a staff, and to work at some parts of his trade which did not oblige him to stand. He also sought other employments requiring less use of the limb. For the last two years he has been under medical treatment in different hospitals in the United States; and though the disease of the facial bones is distressing, yet, as the affection of the knee prevents him earning a livelihood, he is more anxious about it than his other maladies.

The left knee was enlarged to the extent of two inches and a half, both below and above the patella, and the enlargement was more of an oval shape than globular, and was not greater on side of the rectus femoris than the other, but seemed to lie mostly under its tendon, pushing it forward and giving to the upper part of the swelling an abrupt commencement. When pressure was made upon one side of the rectus tendon, the fluid was pushed to the opposite side, making a prominent tumour. The fluid could be easily made to pass from one portion of the joint to the other. The integument appeared thicker and paler than in the two former cases, and was not so much discoloured from local treatment. As the patient had himself witnessed the result of the treatment in the second case, he gladly consented to my proposal to adopt the same plan with him.

The puncture and injection were performed as already described, on April 28th, 1857. The quantity of fluid drawn off did not amount to more than six or seven ounces. It was clear and yellow, presenting the usual characters of the contents of these dropsies. The integument was not thinned so much as in the four other cases. No pain or swelling followed the operation, and notwithstanding his cachectic appearance and bad constitution, the progress towards cure was uninterrupted by the occurrence of a single bad symptom.

"Many of those," says Dr. Macdonnell, "who object to the above plan of treatment, do so under an erroneous idea of the nature of the disease for which it is recommended, and also of the results that are expected to be derived from it. Thus, we find some who have written and spoken against it, confounding simple chronic hydrarthrosis with white swelling (tumeur blanche), and objecting to the injection of a dropsical joint, because the treatment did not succeed in a completely disorganized and suppurating articulation. Now, I would wish it to be distinctly understood, that it is to *pure uncomplicated chronic hydrops* of the knee-joint, that my suggestions as yet apply; for I have not employed the treatment in any other joint, and though I do not believe that injection of iodine would do any harm to a joint already destroyed by ulceration, yet I wish the point to be clearly understood, that it is not in such affections I recommend it. It has also been stated that serious consequences must necessarily follow the mere puncture of so large a joint, and *a fortiori*, the injection of it with iodine, or any other irritating substance, must be extremely dangerous. I shall not here occupy my reader's time in proving the difference, as to consequences, between the puncture of a joint in its *physiological* condition, and a similar wound inflicted upon it in its *pathological* state. Until the surgeon shall have acquired clear and distinct ideas on this point of practice, he cannot understand the

rationale of injections into joints, the seats of chronic synovial effusions; nor of incisions into large and small joints already in a state of suppuration, as recommended by Gay and others, and which (as regards the smaller joints) I have myself often performed.

"There is another objection urged against this practice, founded on the supposition that excessive inflammatory action must necessarily follow the injection, and that anchylosis or even the death of the patient might ensue. In this, as in other instances, one fact is worth a hundred theories. Puncture and injection have been performed not only without bad consequences, but with the greatest success; therefore, to discuss this point any further would be fruitless. But some of the opposition to the practice may be ascribed to the views of Bonnet himself, and to his method of operating. He injected the joint, with the express object of exciting an acute arthritis, which being combated in the usual manner, led to the removal of diseased action from the articulation, and no steps were taken to prevent this excessive inflammatory process. Now, it is evident that, as in hydrocele, the radical cure is often effected, not by inducing violent inflammation of the sac, but by modifying its diseased secreting action, so we should endeavour to induce merely a slight change of action in the synovial lining of the joint; and adhere as closely as possible to the rule laid down by Velpeau and Cabaret to procure in shut cavities, containing effused fluid, an irritation which should be constantly adhesive and never purulent.

"By the method which I recommend, the fluid is forced upwards from the articulation to the synovial bag above the joint lying on the anterior surface of the femur, and when the fluid is withdrawn and only half an ounce of iodine solution injected, the opposed surfaces of the sac are brought into contact and retained in that position by the gentle and equable pressure of a well applied wet bandage. By this means air is prevented entering the joint, the ejected fluid is spread out evenly over the whole synovial surface, and becomes still more diluted by admixture with the secretions of the parts, and a healthy action taking place, excess of exudation and engorgement are prevented, and it is not unlikely that adhesion occurs in the opposed surfaces of the dilated pouch in front of the femur. This result is still further favoured by retaining the joint in an immovable position by bandaging it to a strait splint, and by keeping the patient upon cooling diet. Bonnet recommends us to push the trocar down in a perpendicular direction from the front of the tumour till it strikes the femur. I see no advantage in piercing the synovial membrane in two places, and in wounding the femur; nor have I followed his other direction to inject a quantity of iodine solution equal to the amount of fluid drawn off. In my practice I have thrown in only two drachms of strong tincture mixed with two of luke-warm water.

"In conclusion, I would wish it to be understood, that I do not advise the above line of treatment to be pursued, except in simple uncomplicated hydrarthrosis, that has resisted all other remedies, and that has led to loss of use of the limb, or has prevented the patient earning a livelihood, and enfeebled his constitution by protracted suffering."

Art. 109.—*An improved method of amputating at the Ankle-joint.* By Mr. Quain, Surgeon to University College Hospital.

(*Medical Times and Gazette*, Oct. 10, 1857.)

The case in which this improved method of amputation was exhibited, and the remarks which accompany it, are reported by Mr. Vincent Jackson, Mr. Quain's house-surgeon.

Case 1.—E. B—, æt. 21, a soldier in the Guards, native of Lincolnshire, fair-haired, and florid in complexion, a full-bodied and well-proportioned young man, gave this account of the disease of his foot:—Eleven months ago, whilst jumping at leap-frog, having pitched on the point of his left foot, he felt in it at the time a pricking sensation, but not enough of uneasiness to cause him to desist from playing. Pain, however, came on during the night, and next morning the foot was swollen. Cold applications were used, but as he got no better he was soon taken into the regimental hospital. There he continued under treatment for nine months. The foot became in the mean time much swollen; abscesses formed; and he was discharged from the regiment and the service on account of the persistence of the disease of the foot. When this person was admitted to the hospital, at the end of last April, the left foot was much swollen over the tarsus, and there were several ulcerated openings through the skin. When the tarsal and the tarso-metatarsal joints were moved he felt much pain. But the ankle-joint (tibio-tarsal) did not give that or any other indication of disease. The sinuses extending from the ulcerated openings on the surface, at the inner side of the foot and on its dorsum, were found to lead to the head of the astragalus, to the scaphoid and the cuneiform bones, and to the junction of these last with the metatarsal bones. Another sinus opening beside the tendo-Achillis was believed to conduct to the joint between the astragalus and the os calcis.

The foot was removed. Everything went on well afterwards without interruption. The ends of the tibia and the fibula were well covered with a pad of the plantar integument and muscle; and the patient was walking about with crutches in three weeks after the operation. On examination of the foot after its removal, the disease was found to extend through the tarsal bones, and their joints with one another and with the metatarsal bones. The peroneo-tibial surfaces of the astragalus alone of the tarsal articular surfaces were unaffected, but the disease on the head of that bone extended up to the anterior ligament of the ankle-joint. The inter-osseous ligament connecting the astragalus and the os calcis was reduced to a pulp, while the articular surfaces at each side of it were wholly disorganized.

The second case was in the same ward at the same time. These were the particulars of it:

Case 2.—Richard I—, æt. 20, states that in early childhood he suffered from enlarged glands of the neck; that fourteen months ago he felt pain in the right ankle in consequence of the pressure of a tight boot. The pain was followed by swelling. When he came to the hospital there was a good deal of deformity of the foot from swelling about the ankle. The swelling was most prominent at both sides. At the inner side it was mainly below the margin of the inner malleolus and over the tarsus; on the opposite side it was in front of the outer malleolus. Both the lateral swellings were connected by an elevation extending across the foot in front of the ankle-joint.

Incisions were made, and healthy pus escaped in large quantity. Subsequently diseased bone was detected extending across the foot, and involving all the tarsal bones at their joints, including the joint between the astragalus and the calcaneum. The foot being amputated, the patient, whose health before then was very low from the constitutional effects of the disease, now rapidly improved. The condition of the stump was likewise very satisfactory in every respect. Afterwards the patient was sent to the country, to the convalescent hospital, for a month, and on his return his whole aspect was that of vigorous health. At the same time it was interesting to observe that the muscles of the calf of the leg, on the side from which the foot had been removed, had partaken in the general increase of the muscular system.

October 1st.—This young man walked into the hospital to-day to show himself. He is in excellent health; he walks well with a boot, the foot-part of which is stuffed; he bears firmly on the end of the stump. The stump itself is sound at every point, and in no degree tender to pressure anywhere. The date of the operation was May 14th.

The following observations are taken from the notes of Mr. Quain's clinical lecture upon the foregoing cases: "It appears to me, and indeed it has always appeared to me, that the chief advantage of the operation for removing the foot at the ankle-joint, is due to the fact, that the patient is enabled in progression afterwards to bear directly upon the stump. After any other amputation higher up—that for instance above the ankle, which in other respects is equally if not more advantageous, the person cannot bear his weight upon the end of the stump. Ulceration of the integument would follow; while after an amputation at the ankle-joint, with a flap taken from beneath the heel—from structures, that is to say, which are organized for the purpose—with that covering the bones, pressure is sustained by the end of the stump without injury.

"Now as to the plan of performing the operation: When it was first suggested that the flap should be taken from the under surface of the foot instead of being made from the front and sides of the joint, as previously practised, Mr. Syme, the author of the suggestion, advised that an incision should be made from one malleolus to the other beneath the os calcis. But the dissecting back the concave flap thus marked out from the projection of the heel is a tedious process. One has to dissect in a confined space over the irregularities of the bone; and it has often happened that the integuments have been perforated behind the heel. Moreover, if you read the histories of cases fairly reported, in which the operation has been performed in that way, you will find that counter openings were subsequently required to evacuate pus collected in the cup-like flap. It is in consequence of these evils that I was led to operate in the manner you saw in these cases. Thus, after the incision from malleolus to malleolus under the os calcis, I make a straight incision at right angles with the first, to the back part of the heel on the outer side of the foot, a little above and parallel with its outer margin—between, therefore, the point of the outer malleolus and the margin of the foot. This plan facilitates the dissection from the os calcis, and hastens the operation. Independently of the direct advantage of this method of operating, I may

remind you, by way of answer to possible objections, that the blood-vessels (anterior tibial and posterior tibial) as well as the thicker soft structures, lie at the forepart and inner side of the ankle-joint, and beneath the foot. It is upon the careful preservation of these parts that the nutrition and the firmness of the stump depend. At the outer side, on the contrary, the os calcis is covered only with integument, while the slender blood-vessel, the end of the peroneal artery, as it runs along the periosteum, is injured, probably made useless during the dissection. Hence the incision through this part, while it sets free the flap all around and hinders the bagging of purulent matter, does not interfere with any important structure.

"It may be mentioned, too, that in the recorded cases of the amputation as usually performed, the outer part of the flap, the part now in question, had often been mentioned as having sloughed. This fact is accounted for by the conformation just referred to."

As no mention is made in the foregoing observations of other parts of the operation, it perhaps should be stated that Mr. Quain makes the plantar part of the principal flap short, though long enough to cover fully the end of the tibia; and that he forms an anterior flap, which in the cases above related met the larger one easily. He dwells on the advantage of so cutting the edges of the two flaps, by bevelling the parts beneath the integument, that they shall in the dressing meet skin to skin as far as possible. This is done with a view to avoid the need for the formation of much new skin during the cicatrization.

Mr. Jackson likewise mentions, that with the same view of facilitating the process, he has seen the operation performed with an incision directed obliquely backwards from the malleoli to the point of the heel. This plan, of course, removes the difficulty by omitting the only difficult part of the operation; but the structures from the sole of the foot, those "organized for the purpose" of bearing the weight of the body in progression, are excluded from the flap. The importance of using the structures beneath the heel was enforced by Mr. Quain some years ago, in a "Clinical Lecture on 'the places of election' for Amputations of the Lower Limb," published in the 'Medical Times,' vol. iii (new series) p. 659, and referred to in his recent clinical lecture. In laying down general principles applicable to the amputations of that limb, he there says: "That in no case where the operation is made through the leg or the thigh, can the person afterwards rest easily the end of the stump upon the artificial support. It is only where a part of the sole of the foot is made to cover the bone that the end of the truncated limb will sustain without pain or injury the weight of the body. In other words, it is only the structures which are organized for the purpose that will sustain the pressure in these circumstances without causing pain or suffering ulceration." And again, in the same lecture, these words occur: "I may state that even when this modification in the method of performing the amputation was first made known I took occasion to perform it, and I then advocated the plan on the same grounds that I now offer in recommendation of it." The date of the publication from which these extracts are taken is 1851. Mr. Jackson adds, that the operations which he saw

performed, without including in the investment of the bone the structures here adverted to, did not seem to promise a very satisfactory result.

ART. 110.—*Case of Double Talipes Varus, in which the Cuboid Bone was partially removed.* By Mr. SOLLY, Surgeon to St. Thomas's Hospital.

(*Proceedings of the Royal Med. and Chir. Society*, vol. i, No. 3, 1857.)

The sufferer in this case was a South American, æt. 21, a stout, muscular man, of lymphatic temperament, difficult of control, and particularly sensitive to pain. Both feet presented perfect specimens of the deformity, the left being, however, much the worse, being shorter and more inverted than the other. None of the muscles of the lower extremities were perfectly developed. The treatment first commenced (June 7th, 1852) with the division of several tendons, as well as the plantar fascia, and the application of mechanical apparatus; it was continued through the two following years, during which period two more divisions of tendons were made, and a variety of apparatus (including all the ordinary, a well as a variety of novel, forms) employed. The result was good as regarded the right foot, but most unsatisfactory with the left. Such, however, was the peculiar character of the patient, such his impatience under pain or restraint,—leading him, as it did, to loosen the apparatus and remit the pressure on every opportunity,—that Mr. Solly considered himself warranted in adopting the suggestion of Dr. Little that he should remove the cuboid bone, which seemed the bar to the ultimate success of the case. On June 11th, 1854, Mr. Solly accordingly proceeded to remove nearly the whole of the bone, cutting quite through it, and opening the articulation with the metatarsal bone of the little toe, but not that with the os calcis. So complete was the effect, that the foot could immediately be bent beyond the mesial line in the outward direction, and the finger placed in the chasm was painfully pinched when the foot was so turned. The good effect of the operation, however, was much marred by the loss of three weeks which expired before pressure could be applied. The procedure was not attended with any constitutional disturbance, and the wound healed in fourteen days. In December, 1854, the tendons of the tibialis posticus and flexor communis were again divided; since that period instruments have been relied on for the completion of the cure. The feet are now (January, 1857) fairly on the ground, and the patient bears his weight upon them, and walks with the aid of a stick. The author concluded by observing that although the operation for the removal of the cuboid bone had undoubtedly greatly facilitated the cure in this particular case, yet he did not consider the effect produced to be such as to encourage the profession to perform the operation, except in some few old and obstinate cases which might have resisted every other treatment; and in the event of a recourse to such a procedure, Mr. Solly advised the removal of the entire bone, as tending to

produce a more permanent effect than resulted from the operation in this case.

Art. 111.—*Excision of the Os Calcis by an improved method.* By Dr. Morrogh, of New Brunswick.

(*New York Journal of Medicine*, July, 1857.)

Case.—"On the 1st day of October, 1854, I was requested to attend Mr. Elsworth Dansbury's son, for necrosis of the right os calcis. The patient was twelve years old, of fair complexion, and bright intellect; he was very much emaciated from the disease; both parents were healthy, and seemed robust. They gave the following history of his case: About nine months prior to my seeing him, the boy got his foot slightly squeezed between two railroad cars; he did not complain much at first, but, after the lapse of a week or two, the ankle and foot became swollen and painful. Medical assistance was sought, but the disease increased, and several abscesses broke, leaving cloacæ, which continued to discharge. The ankle continued very painful, and caused intense suffering when placed on the ground; hectic fever supervened, and the boy became peevish, fretful, and very much reduced. This was his condition when I first saw him. The integument round the ankle was livid, glazed, and tumid; it was perforated by three or four fistulous openings, which discharged an ichorous pus; various parts of the calcaneum could be reached by a probe through these openings. It was felt to be denuded and roughened; no other bone could be felt in this condition, although the swelling extended for some distance beyond its limits; I proposed the operation of excision, as a means of avoiding the humiliating alternative of amputation. The parents readily assented; and on the 24th of the same month the operation was performed in the following manner; Dr. A. T. Taylor, of this city, Dr. Pool, of South River, and several of the patient's friends, being present: The boy was placed on his left side, on a table, and rendered insensible with chloroform. A vertical incision was made over the posterior extremity of the os calcis, extending from the superior to the inferior surface, and continued along the inferior surface of the bone, to its articulation with the cuboid, taking care to keep outside of the plantar artery. The incision was then carried upward to a short distance above the superior surface of the bone, without wounding the peroneal tendons; this incision described a square flap on the outside of the foot, which was dissected up, and the tendo-Achillis separated close to its attachment. A strong narrow scalpel was then introduced under the peroneal tendons, and made to separate the calcaneo-cuboid articulation, without severing the tendons, or the artery beneath. The knife was then introduced between the upper surface of the bone and the astragalus, and made to cut the interosseous ligament, and gradually separate the articular surfaces. The calcaneum was then rotated, so as to bring its upper surface outward till the internal made its appearance, when the soft structures were carefully separated, principally by the handle of the scalpel, thus completing the operation. After this mode of proceeding, we had the satisfaction of seeing the posterior tibial and plantar arteries pulsating in perfect integrity, while the tendons of the peroneal muscles, as well as those of the flexor longus policis, flexor communis digitorum, and tibialis posticus were uninjured. No ligatures were required, the flap was approximated, a piece of flat sponge applied over the wound, and a gutta percha splint, previously moulded over the instep so as to keep the foot extended. The operation was followed by a total cessation of pain and febrile action.

"The boy improved rapidly in health; the wound healed mostly by adhesion, the rest by granulation. The cavity partly filled up by what I supposed to be fibro-cellular tissue; and in two months after the operation the boy could run swiftly. At the present time, he wears a small pad in the shoe under his heel, and does not experience the least inconvenience from the deficiency of the bone."

Art. 112.—*Exsection of the entire Os Calcis.*
By Dr. Carnochan, Surgeon to the State Hospital, New York.

(*American Medical Gazette;* and *Dublin Medical Press*, Oct. 7, 1857.)

Case.—John M—, labourer, native of Germany, æt. 28, was admitted into the State Emigrants' Hospital, on the 11th of October, 1854, with caries of the posterior part of the foot. According to his statement, he is of scrofulous parentage, but is himself healthy, with the exception of the local disease, and the apparent effects of prolonged irritation acting upon his system. In October, 1852, after exposure to severe cold, he was attacked with severe pain in the whole lower limb. The region of the ankle and heel became swollen, red, and exceedingly painful; matter in time formed over the os calcis; and this being evacuated, the bone could be felt with the probe, bare, and extensively diseased.

Upon his entrance into the hospital, the ankle and the posterior part of the foot were much swollen; the region of the heel and instep was hard, enlarged, and purple on the surface. Three sinuses existed upon the outer and upper portion of the posterior part of the foot, the outer sinus allowing a probe to pass deeply into the bone. Since his attack he had been unable to follow his vocation or to put his foot to the ground, and could walk only by the aid of crutches. His general health had deteriorated from want of exercise and from the continuation of the discharge. He was immediately put upon tonic and antistrumous remedies—quinine, iod. potassium, and Lugol's iodine solution being alternated, while emollient applications were used upon the diseased parts, and the recumbent posture enjoined. Therapeutic means proved of no avail; the patient rather retrograded than gained; and, fretted continually by his disease, at last demanded an operation to relieve him from his painful and (as he termed it) miserable condition.

This alternative being decided upon, the question arose as to amputation of the leg, or exsection of one or more bones of the tarsus. From the external appearance of the part, it might reasonably be supposed that more bones than one were affected; and with this opinion, amputation at the lower part of the leg was suggested by some as being the most proper proceeding. The sinuses, however, led to the os calcis, and the probe could not detect denuded bone elsewhere. It was finally decided to exsect this bone first, and to proceed to amputation, if the other tarsal bones were found sufficiently implicated.

On the 1st of December, 1855, the patient was brought into the amphitheatre, and chloroform administered. He was placed upon the table, with his face downwards, the diseased foot and the lower part of the leg projecting over the margin of the table. The assistants being properly placed, an incision was made on the outer margin of the tendo-Achillis, commencing about an inch above the external malleolus, and extending downwards to the lower and outer part of the heel, to a point half an inch above the plantar border of the foot. From the termination of this incision another was made to extend along the outer aspect of the foot to within half an inch of the

posterior extremity of the fifth metatarsal bone. From the upper part of the first incision another was made directly across the lower part of the leg, terminating a little within the inner margin of the tendo-Achillis at its upper part. The two flaps thus formed were reflected—the outer from the external aspect of the os calcis, the inner from its internal surface, carefully protecting the posterior tibial artery and nerve, as well as the adjoining tendons. With a blunt-pointed bistoury, the tendo-Achillis was divided close to its insertion. The tendons of the peroneal muscles were then carefully separated from their tendinous sheaths and hooked to one side; the same precaution was also taken with the tibialis posticus, the flexor communis longus digitorum pedis, and the flexor longus pollicis pedis. The external lateral ligaments were then divided, and the joint between the astragalus and os calcis entered from behind. Using now the calcis as a lever, the interosseous ligament, the calcaneo-cuboid, and other ligamentous connections between the different bones with which it is connected were divided, and the exsection of the bone completed by carefully divided the strong ligament running under the tendons of the tibialis posticus and the flexor longus digitorum pedis, between the internal malleolus and the small process upon the inner and anterior part of the os calcis. The different steps of the dissection are much facilitated by making the assistant, who has charge of the leg, flex it slightly upon the thigh, in order to relax the peronei and the flexor muscles of the foot, and also by everting or inverting the foot. By these movements, the ligamentous bands of union between the bones are stretched and made more tense. The articular surfaces of the bones in contiguity to the calcaneum were entirely healthy. The lips of the wound were brought together by points of interrupted suture, and the wound dressed so as to heal by first intention.

In performing operations on the lower extremities, the principle may be laid down, that the incisions should be fashioned so as to leave the resulting cicatrices removed from the influence of pressure or friction during locomotion. This object is obtained by an operation projected upon the plan above described. The cicatrix does not, in the slightest degree, encroach upon the plantar aspect of the foot; consequently, during the movements of progression, it is not exposed to the contact of any surface by which irritation could be produced.

Low diet, with anodyne draughts at night, were prescribed for a few days. The tonic treatment was again resumed and continued. The wound gradually healed, continuing to discharge, from a point under the external malleolus, a considerable amount of sero-purulent matter. This gradually ceased, and, three months after the operation, the cicatrix was sufficiently hard to allow the patient to put his foot to the ground and walk.

The pathological condition of the os calcis is such as to place it beyond the reach of restoration by internal or constitutional means. The bone is very considerably enlarged by the inflammatory process which has pervaded its whole extent. The greater part of the bone, and particularly the posterior and outer portions, are in a state of confirmed caries. The more anterior portions, and those parts not affected by actual ulceration, are expanded and in a state of sub-inflammation.

December, 1856.—The patient soon became strong and healthy, and, at the present time, with a padded heel to his shoe, he walks with but little impediment, and without the slightest inconvenience from the cicatrix.

PART III.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 113.—*On the presence of Sugar in the Urine of Pregnant, Parturient, and Puerperal Women.* By Dr. KIRSTEN, of Leipzig.

(*Monatschr. für Geburts.*, June, 1857; and *Med.-Chir. Review*, Oct., 1857.)

THE researches of Blot (*vide* 'Abstract,' XXV, p. 304) on the presence of sugar in the urine of pregnant, parturient, and puerperal women, suggested to Dr. Kirsten the expediency of independent inquiries with a view to the verification of Blot's results. M. Blot arrived at the conclusion, that the presence of sugar in the urine of women under these circumstances was a physiological phenomenon; and that its disappearance was the result of an intercurrent pathological condition. Dr. Kirsten observes, that if this conclusion were true, we should possess in the disappearance of the sugar a tolerably sure measure of the condition of a puerperal woman, since this would indicate a commencing pathological disturbance, whilst its return would indicate reconvalescence. Dr. Kirsten examined the sugar-relations in two women. His observations do not altogether accord with those of M. Blot: they rather point to the reverse condition, namely, that sugar is present in greatest quantity in the urine of puerperal women when the milk-secretion—whether through a pathological process, or the weaning of the child—is arrested. Thus he observed in several puerperal women whose children had died, that on the second, third, or fourth day after the death the sugar appeared in greatest plenty. After this time, the quantity fell in the same degree as the milk diminished; but in four cases it could be demonstrated twelve days later. In three cases in which the patients were seriously ill in the puerperal state, and in whom the milk-secretion was almost null, the sugar was found in greatest quantity. One of

these last women had suffered from common œdema during pregnancy. The examination of her urine revealed copious albumen, which diminished with the œdema, without disappearing altogether. Towards the end of pregnancy traces of sugar became apparent. She was delivered easily of a badly nourished child. Repeated attacks of peritonitis followed. The milk-secretion was very scanty, and the milk very thin: sugar was present in the urine in abundance. In the second patient, who suffered from peritonitis, followed by pyæmia, Dr. Kirsten was able to detect sugar up to the day before her death, this substance having been present in great quantity at the beginning of her illness. The third case was quite similar. On the other hand, he was rarely able to discover more than mere traces of sugar in the most healthy women, who had well-nourished children and a superabundance of milk.

It hence appears that glycosuria belongs rather to pathology than to physiology. The key, Dr. Kirsten thinks, is to be found in the most recent researches of Bernard. This physiologist has shown that the formation of sugar in the liver is especially apparent when the abdominal circulation is increased, and the temperature rises. The biliary matter chiefly turns into sugar at a temperature of 40° cent. No time was more favorable for this transformation than gestation, when the abdominal circulation and temperature are always raised to the necessary point for sugar-formation: whence we ought always to expect glycosuria in pregnant women. But as this is not the case, we are obliged to conclude that the greater quantity of sugar produced at this period is wanted for the nourishment of the child, so that it cannot be excreted. It would be interesting, with a view to the verification of this hypothesis, to examine the urine of women whose children may die, as quickly as possible after their death.

During the puerperal week the abdominal circulation is lessened, and the afflux of blood takes place towards the periphery, as is evidenced by the milk-secretion and sweats. This condition would not be favorable to the formation of sugar.

Art. 114.—*On the use of Chlorate of Potass in Pregnancy.* By Mr. Grimsdale, Surgeon to the Liverpool Lying-in Hospital.

(*Liverpool Med.-Chir. Journal*, No. 2, July, 1857.)

Every one engaged in midwifery practice will have met with cases in which the child is carried successfully into the viable period, but some time between this and the full term of pregnancy, is born still, or very weakly; and this perhaps for several successive pregnancies, without any external or accidental cause to explain the premature death and delivery, and with no evidence of syphilitic taint in the parents.

It is in such cases that Mr. Grimsdale (in accordance with a suggestion thrown out some years ago by Dr. Simpson) has been in the habit of prescribing chlorate of potass with some apparent benefit.

Case 1.—Mrs. Darbyshire, a stout, healthy-looking woman, æt. 34, was delivered of a female child, after a labour of eleven hours' duration, in the

Lying-in Hospital, on the 24th March, 1852. During labour there was a large discharge of very offensive, dark-coloured, muddy water; the nurse told me she filled two chamber-pots with it, besides what escaped in the bed. The child was with difficulty made to breathe. It was jaundiced from birth, and died of hæmorrhage from the umbilicus, on the seventeenth day.

The placenta was diseased; portions of its maternal surface were seen to be of a pale yellowish colour, and these were firm to the touch, and penetrated nearly to its fœtal surface; at least one fifth of the bulk of the placenta must have been occupied with these firm pale portions. The centre of each patch was firmer than its circumference, and it seemed to pass insensibly and gradually into healthy placental structure, having no accurately defined boundary. On the maternal surface were also several stellated patches of vessels, distinctly gritty to the touch.

Dr. Inman kindly examined this placenta under the microscope, and he did not regard the changes observable in it as due to inflammation, neither was it an instance of fatty degeneration. This woman had had four previous pregnancies, in which she had been attended by a midwife at her own home. The children were all still-born, and said to have been yellow. Of the state of the after-births I could learn nothing satisfactory.

About the middle of April, 1853, this patient came to me, stating that she was five months in the family way, and would be glad if anything could be done to avoid the birth of another diseased child. I gave her chlorate of potass 5 grains three times daily, to be increased in a fortnight to 10 grains. She continued this with but little intermission to the time of her delivery, on the 13th of August, when she gave birth to a healthy child, which is now (October, 1855) living and thriving. The placenta was large, and quite healthy-looking. I may remark, that before commencing the chlorate of potass treatment, I made careful inquiry as to the probability of any syphilitic taint in either husband or wife, and could detect nothing in their history to warrant any suspicion.

Case 2.—Mrs. Egan, a poor woman, æt. 21, pale and rather delicate-looking, presented herself at the dispensary of the Lying-in Hospital in April, 1855, and stated herself to be four months in the family way. She said that she had been four times pregnant before, and had on each occasion given birth to a dead child. Her labours had been of no great severity, and of moderate duration; the midwife who attended her told me that the children were small, and appeared to have been dead some days; the after-births, she said, were "pale in parts, and queer-looking." The husband was a steady working man. I saw him; he looked strong, and denied having had syphilis.

The former pregnancies had been attended with no pain. I ordered chlorate of potass, 20 grains a day. She continued this for four months. On the 5th September she was delivered of a fine healthy child, which is still (October 10th) thriving and without ailment. The placenta was large and healthy.

Case 3.—Mrs. D—, æt. 33, of spare conformation, hysterical temperament, became pregnant about six months after her marriage. After quickening, the movements of the child were distinct, and increasing in power up to the end of the sixth month of her pregnancy; she then began to feel them decidedly weaker; not much notice was taken of this, as she had no pain, until in about three weeks she ceased to feel any movement. I saw her, and on examining with the stethoscope, could hear no fœtal heart sound. In about a week from this she gave birth to a dead child, the cuticle of which was beginning to desquamate. It was well formed, but the skin was

wrinkled, and it looked ill-nourished. The placenta was in parts pale, firmer than natural, and its vessels in these parts deficient in blood.

In March, 1853, I again saw her; she was then pregnant three months and a half. I recommended her to take the chlorate of potass at once. She began with 15 grains in the day; she had only taken it three or four days when she complained that it made her head ache. I ordered its discontinuance, but in a few days again prescribed it without her knowledge; again she complained of intense headache, and I left it off for a month. She tried it once more, but declared it gave her a most fearful headache, which she could not bear. This second pregnancy followed as nearly as possible the same course as the first, and with the same results.

In December, 1853, she was again pregnant; I saw her when she was four months advanced, and wished her to try the chlorate in smaller doses. She took 3 grains thrice daily with impunity; this was continued for three weeks or a month; she then increased the dose to 4 grains, and subsequently to 5 grains. All seemed to go on well. The movements of the child, she said, were considerably stronger than in her former pregnancies.

When well into the seventh month, she was riding out in her carriage, a low, four-wheeled phaeton, when another vehicle ran into them, smashed the carriage, and upset its occupants. My patient was of course much frightened; she felt, she stated, a violent commotion in her inside for some hours, but after that day did not feel any movement. She was from home at the time: in two or three days she returned; I then saw her, could detect no fœtal heart-sound, and believed the child to be dead. In ten days from the date of the accident labour came on, and she was delivered of a dead child.

Nothing could be more marked than the contrast presented between this child and its placenta, and those of the two former deliveries. This child was plump, and had all the appearance of a healthy seven months' child; the placenta was everywhere soft and spongy, and its vessels seemed to have been uniformly full of blood.

This lady became pregnant for the fourth time in the beginning of October, 1855. About the end of the third month she commenced to take the chlorate in 3-grain doses, and gradually increased it to 5 grains, thrice daily. She was occcaionally compelled to intermit its use, in consequence of the headaches, as before; but with these exceptions it was persevered in until the full time of pregnancy, when she was delivered (June, 1856) of a healthy male child, now living (June, 1857). The placenta was quite healthy.

Case 4.—Mrs. —, a stout, healthy-looking woman, came to me in November, 1854. She was between three and four months gone in the family way. She had been seven times pregnant before, but had never given birth to a living child. One child she carried to nearly the full time; five had been born between the sixth and eighth month, and one was aborted at an early period of pregnancy. I ordered her to take the chlorate in 5-grain doses, thrice daily; and after the fifth month especially enjoined the immense importance of rest; this latter injunction she seemed determined not to comply with.

She went on well until February, 1855, frequently stating that she felt the movements of the child stronger than usual. On the 12th, after having kneaded a large pan of dough, and performed sundry other laborious domestic exercises, labour came on unexpectedly, and she was delivered in five or six hours of a *living* child—the first of all her children that had ever breathed. It was a breech presentation: the child seemed of about six and a half or barely seven months' development, and only lived a few hours. The placenta was healthy.

Case 5.—Jane D——, æt. 36, presented herself at the Lying-in Hospital, September 12th, 1853. She said that last year she had miscarried at six months, without any apparent external cause. The child had been dead some time: she learned this from the midwife who attended her. She was now four months advanced. She commenced the chlorate 15 grains in the day, continued it on and off during the rest of her pregnancy, and was delivered of a healthy child at full time.

I have notes of ten other cases similar to this last. I do not think they are worth much as evidence; they will, therefore, scarcely add to the interest of this paper, and I refrain from giving the details.

In two cases apparently likely to have received benefit from the chlorate, and in which it was exhibited as usual, I failed to perceive any favorable result. In one of the cases, death of the fœtus, and miscarriage at the seventh month, occurred, as it had done in three previous pregnancies. In the other, the child was born dead and ascitic, at eight months and a half, the placenta being hydropic. The mother had, before taking the chlorate, given birth to four still-born children in succession.

Of the nature of the diseased action in these cases, I am not prepared to say much. It would seem to be located primarily in the placenta, and to cause the death of the child secondarily, by the consequent effects on the placental function. The morbid appearances in the placenta would seem to be tolerably uniform: I can see no evidence of their inflammatory nature; and there certainly were no previous symptoms indicative of inflammation in any of the cases.

Art. 115.—*What is the Natural Position of a woman during Labour?*

By Edward Rigby, M.D.

(*Lancet*, Oct. 3, 1857.)

This question was suggested to Dr. Rigby by the perusal of an interesting paper by Dr. Schütz, in the 'Transactions of the Berlin Obstetric Society' (Verhandlungen der Gesellschaft für Geburtshülfe in Berlin), No. 4, p. 37, on the subject of concealed or secret parturition.

Dr. Schütz points out a fact which, considering the circumstances under which parturition in secret must usually occur, is perhaps, after all, not so singular as on first sight it might appear to be. From the result of extensive observations, particularly in a special work upon this subject by Dr. Cohen van Baren in Posen, it appears that a considerable number of those unmarried females who are delivered in secret go through the process of labour in an unusual position.

Of 100 cases of concealed parturition, which Dr. Cohen has collected, and of which depositions have been taken, fifty occurred with the patient in an unusual position. Thus we may assume, in cases where a woman is alone, and ignorant of the process of labour, that in half of them she will give birth to her child in a position different to that which is ordinarily used by women who have assistance rendered them at this time. Of the fifty cases just alluded to, in thirty the child was born with the patient in a standing posture; eighteen were delivered in a crouching, squatting, or sitting position, and two kneeling.

In fifty other cases which have been collected at Berlin, the position of the patient at the moment of delivery was ascertained only in forty-five, but of these thirty-two were delivered in an unusual position—viz., fourteen standing, sixteen crouching, squatting, or sitting, and two kneeling.

Although we have no means in England of procuring such data as our more accurate and methodical neighbours in Prussia have, yet it is probable that the experience of those medical men who have had extensive opportunities of observation will fully bear out these facts.

The question, then, which naturally suggests itself is—If a young woman be entirely unattended and uninterfered with during her labour, and therefore left completely to the guidance of her own instincts, what is the position she will assume at the moment of childbirth?

The chief data which we possess respecting the position of women during labour refer almost solely to that, or those, which have been adopted in different ages by civilised or half-civilised nations; but as regards the young girl, European, Indian, or Negress, who has retired into solitude and concealment because new and peculiar pains warn her that her pregnancy is about to terminate, but in utter ignorance of everything beyond this fact; as regards the manner in which this child of instinct will act at the moment of parturition we know but little.

In the earliest periods of civilised life to which history bears record, women appear to have been delivered in a sitting posture, upon a seat constructed for the purpose. Thus in the instructions which the King of Egypt gave to the Hebrew midwives, he is recorded to have said, "When ye do the office of a midwife to the Hebrew women, and see them upon the stools; if it be a son, then ye shall kill him; but if it be a daughter, then she shall live." (Exod. i, 16.) The sitting posture appears to have been that chiefly used in civilised nations from these early times down to the last century, and doubtless suggested the well-known labour-chairs of H. van Deventer and others; and Dr. Smellie mentions (vol. i, p. 203, 4th ed.), that in remote parts of England "the patient is seated on a stool made in the form of a semicircle; in other places she is placed on a woman's lap; and some, kneeling on a large cushion, are delivered backwards."

The supine posture, which is still so common (and, indeed, almost universal) on the Continent appears to have been used in England during the early part of the last century. Chapman (1735) recommends the supine posture for turning the child, which Dr. Rigby scarcely thinks he would have done if he had been accustomed to cases of ordinary labour with the patient lying on her side. Dr. Rigby has the impression also that in Giffard's cases he has met with allusions to the supine posture as that which was adopted during labour.

In Scotland the position on the back or the side appears to have been used indifferently till a much later period. Thus Alexander Hamilton (1775) says (p. 137), that the patient is to be "placed on her side or back;" although his celebrated namesake, Dr. Alexander

Hamilton, in 1784, limits the patient's position to being "placed on her side." ('Outlines of the Theory and Practice of Midwifery,' p. 208.) Dr. Spence, who also published his 'System of Midwifery' at Edinburgh in 1784, advocates the position on the side, inasmuch as "by this situation the woman may lie as safe and comfortable as her case will admit of;" but he adds, "though this position seems preferable to the others that I have mentioned, it must be allowed that each of them has very great advantages in particular cases" (p. 151). In speaking of "the position of women during labour" (p. 148), he first alludes to the reclining posture which was adopted in those countries where Deventer's chair was used, and states that it was "nearly the same with that of women when delivered upon the common delivery-chairs used in the lying-in hospitals, and which some imitate by placing the woman to be delivered in the lap of a robust female." "The next position, and one which is pretty much practised in the northern parts of this country, is where women are delivered hanging about the neck of a person as tall, or rather, if possible, taller than themselves, who gently supports the small of the patient's back with her hands, and with her knees fixes the knees of the woman in labour. Other women incline to be delivered kneeling down at the side of a bed or chair, and leaning upon it with their elbows and head" (p. 149).

In treating of this subject, the late C. White, of Manchester, is perhaps the first who has distinctly pointed out that the horizontal posture, especially on one side, is the fittest for a woman to be in during the actual expulsion of the child. "When the business is so far advanced that there is reason to believe the child will soon be born, it is, in my opinion, of great consequence that the woman should be in a horizontal position, and it will be most convenient if she lie upon her side towards the practitioner. Other positions, indeed, such as standing, sitting, hanging by the arms between two persons, half-sitting and half-lying, either upon the bed or the knee of an assistant, may be, and I believe are, often serviceable in expediting delivery, and are therefore extremely proper in slow, tedious labours, except at the conclusion; but I would by no means advise that the child should in any case whatever be born, or the placenta extracted, in any of these positions." (C. White on 'Lying-in Women,' p. 105.) This quotation contains, in fact, a summary of nearly all we know as to why one position should be better than another for a woman during the act of parturition; and his observations apply with peculiar force to where the patient is in a sitting position, as it is a well-known fact that the expulsion of the child while the mother is in this position, especially if at the same time she has the means of fixing her extremities so as to strain with greater effect (as when on a labour-chair), is especially liable to be attended with laceration of the perinæum: thus Tolver remarks, that "at Brussels, where Deventer's chair is indiscriminately used, lacerations of the fourchette and perinæum are very frequent." ('On the present State of Midwifery in Paris,' by A. Tolver, 1770, p. 9.)

Mr. White has, however, discussed the very point in question, in describing the manner in which a young woman might be supposed

to act during labour, if out of reach of any assistance. "Should a straight, healthy young woman, who had never suffered from improper dress, inactivity, or unwholesome diet, be seized with labour-pains upon an open common, totally unattended, and with no assistance near, she would for some time walk about, then sit down to rest, then rise and walk again, till, for her own ease and the safety of the child, she would find it necessary to lie down."

Professor Naegelé, of Heidelberg, feeling much interest in this subject, made the following experiment, to determine as far as possible how a young woman, who was entirely ignorant of parturition, would act during this process if left completely to herself. A young unmarried girl, who, from her youth and extreme simplicity appeared to be a favorable subject for the experiment, was selected at the hospital. Her room was furnished with a few chairs, a bed, a sofa, and also a labour-chair. All allusions to her labour were carefully abstained from. During the first half of labour she took her pains in a variety of ways, sometimes standing against the wall, at others leaning over the back of a chair, &c. When tired of standing, she sat down, and could not at first make up her mind which was most comfortable, a chair or the sofa. One trial of the labour-chair was quite conclusive to her mind, and she did not repeat the attempt. As the straining pains of the last stage came on she began to lie down, first on the sofa, then on the bed, which she ultimately preferred, rolling first on one side, then on the other, or taking her pains lying on her back; but when the expulsion of the head commenced she turned upon her left side, and the child was born in this posture. The result of this experiment chiefly influenced Professor Naegelé in adopting the position on the left side, or English position, as it is called abroad, and which had been introduced at Vienna some years previously by the celebrated Boer, after his visit to this country.

A West Indian, at the author's request, sought information on this subject from an old planter who had lived in Jamaica, many years before the emancipation of the slaves there; and his observations, although not in accordance with the opinion which Dr. Rigby has given respecting the position which a woman takes during the expulsion of her child, are too interesting to omit here. He remarks that "there is no natural position, but positions—no more than for a man with colic, for instance, the West Indian 'dry belly.'" "Idleness or exercise produce their consequences there as elsewhere. At the —— estate many women died and many children in parturition. The cause appeared that the women were ordered to go to the hot-houses, or allowed to do little or no work some weeks, perhaps months, before lying-in. An order given that they should work up to the latest before they were put to bed had the effect that no women died in childbirth, and no children by difficult delivery. In place of a loss of women and children that year, forty to forty-four children were added to the estate, and the premium allowed by the county to the overseer was awarded to ——, which he generously distributed among the mothers. Anything African was forgotten, for few, probably no women were imported; girls only, who consequently produced their children *à la Creole,* or *à l'Anglaise,* or *à l'Ecossaise.* Civilisation has put the

English on their sides—the French on their backs. A girl or woman in the bush would know no natural posture other than turning, lying, rolling, or remaining in that posture in which she had least pain." This, therefore, seems to confirm the observations of Dr. Schütz and of Dr. Cohen van Baren, that, after all, it appears to depend in great measure on accidental circumstances which determine what position an unassisted woman assumes when seized with the violent pains which effect the expulsion of the child; that in a state of nature, and also in civilised life when deprived of the ordinary arrangements and conveniences for her labour, she will be influenced by a variety of circumstances. If the labour be long and tedious, and she be considerably exhausted, she will almost certainly have assumed the recumbent posture long before the expulsion of the child. On the other hand, if the process has been quick, she will continue in the standing, kneeling, or other postures, as mentioned by Drs. Schütz and Cohen van Baren, until the end; but that when enjoying the comforts and attendance which belong to civilised life, she will, in great measure, be guided by the arrangements which are made for her confinement, and will assume that posture for which they are specially adapted.

Art. 116.—*Case of Unconscious Delivery.*
By Dr. George Smith, Residency Surgeon, Hyderabad, Deccan.

(*Indian Annals of Med. Science*, April, 1857.)

The case here recorded is another proof that the whole process of labour may be carried on and completed without sensible uneasiness.

Case.—Mrs. —— was daily expecting her confinement. On the 24th of April last, I was sent for suddenly; and, on reaching the house, found the child born and lying below the bed-clothes, close to the body of its mother; the cord was entire, and the placenta within the vagina; the delivery had taken place suddenly. During the night preceding her delivery, this lady had felt quite well, she rose several times to attend to her sick child; about 5½ a.m. she walked from her house to the bungalow in which she was confined. When she reached the bungalow, she lay down upon the cot, and experienced a *very* slight sensation, as if her bowels were about to be relieved—a feeling, as if something had touched her body followed, and caused her to ask the ayah to lift the bed-clothes; when, to the surprise and alarm of both, the child was found entirely extruded. Mrs. —— was awake, and yet so little was her notice attracted by her feelings, that the delivery took place unconsciously. Had she been standing or seated on her night-chair, the result would, probably, have been instantly fatal to the child. Had she been asleep, the child, I am satisfied, would have been suffocated. This was her second child, her first was born with the usual pains, after a labour extending over six hours. I have the most implicit confidence in the patient's statement, having made searching inquiries into the case. The child, a female, was a little, but not much, undersized. Dr. Montgomery relates an instance of unconscious delivery during sleep; this case is still stronger, in proof that delivery may, at times, take place unconsciously, for the patient was awake and expecting hourly her confinement, consequently alive to the slightest approach of symptoms indicating the commencement of the parturient action. This case has a double aspect, one medical, the other medico-

legal. I have seen females (not primiparæ) delivered within half an hour of the recognised commencement of uterine action, and with what I considered the *minimum* amount of uneasiness, through the whole of which the woman might have slept, undisturbed; but the expulsion pain, causing the extrusion of the head, was always so well marked, as to have roused the patient, had she been in ordinary sleep."

Art. 117.—*The effect of Prolongation of Labour upon the mortality of the mother.* By Dr. J. Matthews Duncan.

(*Edinburgh Medical Journal*, July, 1857.)

The proposition which Dr. Duncan endeavours to establish, is that the duration of labour is only an inconsiderable part of the many causes (single or combined) of the mortality of women in parturition and childbed.

"There is no obstetrical doctrine more deeply impressed on all the valuable literature of our profession than this, that the mere duration of labour, considered in itself and apart from other causes of danger liable to spring up as the process becomes protracted, is of little importance, so far as recovery and life of the mother are concerned. The doctrine is embodied in the ever-recurring inculcation of patience, as the highest virtue of both mother and attendant, in many and various circumstances of distress during labour. Sometimes it is expressed in an apothegm, as 'Meddlesome midwifery is bad;' at all times it is diligently instilled into the minds of young midwives and accoucheurs. Unlike our first proposition, a comparatively barren theorem, this is one of the best recognised and most valuable doctrines in obstetrics. It is one, therefore, of the utmost consequence to defend and confirm.

"The proposition does not affirm that the mere duration of labour is of no importance; quite the reverse. Far less does it affirm that the duration of labour, with the accompanying pain and struggles, is not a very considerable element in the history of every case. It says nothing in regard to the very important effects of the duration of labour after bad symptoms or dangerous complications have supervened. It asserts that the duration of labour is in itself (*per se*) only an inconsiderable part (probably a very inconsiderable part) of the many causes of the mortality of women in parturition and childbed.

"Perhaps the strongest evidence in favour of this proposition, is the fact that it is the ancient and generally received opinion of the profession.* It rests upon what may be called the instincts of all expe-

* In attempting the defence of the opposite view, Dr. Simpson says, "I am fully aware that when I state my conviction that the mere degree of duration and continuance of a labour is, *per se*, dangerous both to the mother and child, and very often fatal even in its influence, I venture to broach a doctrine which stands up alike against the opinion and the practice of some of the highest authorities in the obstetric profession.

"About half a century ago, when treating of the influence of the duration of labour in difficult and instrumental deliveries, Dr. Osborn observed, 'I believe it is confirmed by general observation, that women recover at least as well after long, lingering, and laborious labours, the duration of which may have been extended to several days, as after the easiest, quickest, and most natural delivery.' In making this remark, Dr. Osborn stated, not his own opinion only, but, I believe, the general opinion of the accoucheurs

rienced accoucheurs. In a science like medicine, where so little is capable of absolute demonstration, the opinions of the great and wise, especially if supported by ancient tradition, are among the most valuable and trustworthy guides of practice.

"But the proposition may be supported most satisfactorily, both by direct and indirect evidence. Were it true that, 'contrary to the general opinion of the obstetric profession, the mere length of the labour is a most serious and important element in reference to the degree of danger and fatality accompanying the process,' then a well established rule of philosophising must be declared to be at fault. It was a maxim of Newton's, that no more causes are to be admitted than are true and sufficient to explain the effects. Now it will be asserted by scarcely any one, that any obstetric patient dies without a very evident, true, and sufficient cause. The causes of such deaths are very various indeed; but the mere length of labour is, by Newton's maxim, excluded from the number, as the truth of it is in question, and it is not required to explain the phenomena.

"Moreover, it is always true in nature that uniformity of cause ensures uniformity of effect. This axiom is also at variance with the belief that mere duration of labour is an important cause of fatality from the process. For it is a common observation that after long labours, even after the longest uncomplicated labours, there is often unusually rapid recovery. In the great mass of very long cases there is generally present some distinct and dangerous complication, which obscures the influence of the mere length of the labour, and destroys their value in regard to the observation of the effects of mere protraction. Again, in short and easy labours, where duration as a cause of fatality, supposed by some to be supremely important, is absent, there is still a considerable mortality.

"Dr. Collins has distinguished himself by his zealous defence of the doctrine embodied in our second proposition, maintaining, as he does, that the mortality from protraction of labour, apart from other causes, is comparatively small. His valuable 'Practical Treatise' contains no record of any case dying from the mere length of the labour; and his experience, founded on his wide field of observation, leads him to believe mere protraction of labour an inconsiderable cause of maternal mortality. It would be difficult to adduce statistics, at least from Dr. Collins's work, to prove our second proposition. We have already shown how erroneously statistics framed from the data in his work have been used, and pushed forward as if proving that our second proposition is false. But some of Dr. Collins's data are almost as valuable as if they were positive proofs, from the light which they throw on the real causes of death in protracted cases.

"To take one aspect of Dr. Collins's cases, as he has himself given it:* Of 16,414 parturient women under his care in the Dublin

of his time; and the same doctrine, little or not at all modified, still continues to be taught and acted upon, down to the present day, in the great English and Irish schools of midwifery, as the able and excellent writings of (for example) Professors Davis and Murphy, in London, and Drs. Collins and Beatty, in Dublin, &c., fully testify."—('Provincial Medical and Surgical Journal,' Feb. 9, 1848, p. 57.)

* 'Provincial Medical and Surgical Journal,' Oct. 18, 1848, p. 573.

Lying-in Hospital, 42 died, whose labours were longer than twenty hours. 'Of the 42, 3 died of typhus fever; 9 of puerperal fever; 1 of stricture of the intestine, with effusion into the thorax; 3 where the placenta was retained; 2 of convulsions; 1 of abdominal inflammation previous to labour; 9 of rupture of the uterus; 1 of inflammation of the intestines, with pus in the uterine sinuses; 3 of anomalous disease; 1 of diffuse cellular inflammation; 6 of inflammation, &c., subsequent to difficult labour; 1 of ulceration and sloughing of the vagina; 1 of disease of the lungs and hæmorrhage; and 1 of abdominal abscess.' Here it is evident that we have a list of causes of death, apart from mere duration of labour, in all the cases where the length of the process exceeded twenty hours. No doubt the mere length of the labour may have been an aggravation in all these cases, but of this there is no evidence whatever in Dr. Collins's data, however arranged; and we must accept the opinion of Dr. Collins, who took care of all the cases, an opinion sanctioned by previous general acceptation for ages, that protraction of labour was an inconsiderable part of the many causes of this maternal mortality in childbed.

"The true bearing upon the great question before us of the statement just quoted from Dr. Collins, has been altogether misconceived in some quarters. Dr. Collins's statement has been represented as 'a list merely of such injuries and diseases as tedious labour does produce;' and it is added, as if it were an apt illustration, that 'long ago surgeons always used to argue, in regard to their lithotomy and other cases, that the deaths were from inflammation of the bladder, or inflammation of the intestines, or disease of the kidneys, or of the liver, or—anything, in fact, but the operation itself. Modern surgery (it is said) does not admit of such pathological casuistry. Nor does modern midwifery.'* It is scarcely worth while to stop to contradict, in the most summary manner, the indiscreet reproach so easily cast upon old surgery and surgeons. Let us submit for a moment, and for argument's sake, to consider it true; and only for a moment, as its irrelevancy will be easily made apparent. These old surgeons argued that their patients did not die of lithotomy, or of its consequences. Dr. Collins does not argue that his patients did not die of labour and its consequences; on the contrary, he admits it. Dr. Collins argues, in opposition to Dr. Simpson, that the 'mere length' of labour was not a cause of death. To make a just use of the analogy above given, Dr. Simpson should have condemned the old surgeons for not considering the mere duration of the operation of lithotomy as a chief cause of the mortality of the operation. Dr. Simpson wishes us to condemn the old surgeons for not admitting inflammation of the bladder and intestines, &c., as causes of death in connection with lithotomy. In his zeal to prove the importance of mere duration of labour in reference to the fatality of the process, he censures Dr. Collins for admitting exactly analogous diseases as causes of death in connection with labour. Moreover, when Dr. Simpson speaks of 'tedious' labour, he uses a well-known term, implying a great deal more than mere length of labour. When he says that tedious labour produces such diseases as Dr. Collins enumerates, then

* Ibid., Nov. 1, 1848, p. 506.

he and Dr. Collins are at one, and he had no right to address him as if committing a very great error. When he says that tedious labour produces these effects, he is not differing from, but agreeing with, the whole profession; only he is deserting the position which Dr. Collins attacked, and which he would still fain appear to hold. For his statement is not that tedious labour leads to these causes of death—a true one, but 'that the mere degree of duration and continuance of labour is, *per se*, dangerous both to the mother and child, and very often fatal even in its influence;' a doctrine most obviously incorrect.

"The element of mere duration of labour is, in fatal cases, so mixed up with other circumstances, that I despair of medical philosophers being ever able so to handle obstetric statistics as to make them yield anything like an approximation to a proper estimate of the baneful influence of mere duration of labour. In protracted cases, with no other evident dangerous complication, it is a common remark that the patients appear to make unusually rapid recoveries.

"In tedious cases it is not the protraction which causes the complications and danger, but the complications which cause the protraction and danger, leaving the mere protraction as a negation destitute of any presiding influence."

ART. 118.—*Labour postponed for sixty-eight days after the rupture of the membranes.* By Dr. MONTGOMERY.

(*Dublin Hospital Gazette*, Jan. 15, 1857.)

CASE.—"A lady who had borne two children menstruated, for the last time, on the 22d May, 1850, and then, becoming pregnant, quickened on the 26th September, and went on perfectly well until the 11th November, when, just as she was going to bed, she became conscious that there was a watery discharge from the vagina, which, as the event proved, was the liquor amnii.

"This occurred at her residence, between eighty and ninety miles from Dublin, and caused her great alarm, as she took for granted that her labour must be at hand, and as I had always attended her, she had a great objection to be confined under any other hands. So strong was this feeling, that she determined to run the risk of travelling up to town, which she did in a railway carriage, accompanied by a medical man, for fear of the worst.

"She arrived safely in town on the 13th, and took up her abode near me; the discharge, which was generally limpid and colourless, but occasionally rose-coloured, continued without intermission; but it was soon observed, contrary to what might be expected, that the flow was greatest when the lady was lying down, and least when she was sitting up, or walking about.

"This, which she was the first to observe, puzzled her very much, and she pressed me for an explanation, which I did not feel much difficulty in offering, and I told her that I thought the opening, which I presumed was very small, had in all probability taken place very high up, while the lower part of the membranes remained sound; in which case, when she stood up, the water would sink below the level of the aperture, and so not flow out; but when she lay horizontal there was nothing to prevent its constant escape. The result justified this supposition.

"Her health continued very good, she drove or walked every day, she continued to increase in size, and the motions of the child were, to the last, active.

"On the 18th January, 1851, labour supervened, and was short, and in every respect most favorable. On my arrival I found a full bag of waters presenting at the os uteri, which was fully dilated, and in about an hour she gave birth to a son, of full size, for eight months, but very white, and he never became rosy, as he ought, after crying strongly, which he did at first; but afterwards he fell into the peculiar incessant wailing low cry, which is always of such evil augury in new-born infants. A wet-nurse was immediately provided, but the child would not suck, nor would it swallow fluids conveyed into its mouth; it gradually grew more feeble and exhausted, and in six hours ceased to exist.

"The placenta was allowed to come away with the least possible assistance, and on floating it in clean water, with its membranes, I found in the latter, within half an inch of the edge of the placenta, a small aperture of about an eighth of an inch in diameter, the edges of which looked as clean cut as if it had been made with a fine punch: this fully explained the peculiarity above alluded to.

"Now, in this case, the daily discharge amounted, on an average, to about five ounces of fluid, and lasted for sixty-eight days, so that there must have come away about 340 ounces, or twenty-one pints, making nearly three gallons; and it seems reasonable to infer that the debility of the child arose from so much of the vital action which should have contributed to its sanguineous support, having been expended in secreting such a quantity of liquor amnii.

"Such a lesion as this is also interesting, as affording a probable explanation of the nature of at least some of those cases, in which abundant serous discharge takes place from the vagina during pregnancy.

"I may mention, as a curious fact connected with this case, that the same accident happened to the lady's mother."

Art. 119.—*On the employment of Pressure in place of Traction in Delivery.* By Dr. V. Ritgen.

(*Zeitsch. für Geburtsk.*, Bd. viii, 1857; and *Medical Times and Gazette*, May 23, 1857.)

Dr. V. Ritgen observes, that while natural delivery is effected by the exertion of a pressure which keeps all the parts of the child compactly together, and is most favorable for its passage through the pelvis, and the preservation of its life, when the accoucheur interferes, his procedures consist in the employment of some means for effecting traction, during which the ovoid form of the child becomes disturbed, and its successful delivery rendered more difficult. The object of the present paper is to suggest that on several occasions pressure may be substituted for this traction; but we are of opinion that the practices he suggests are frequently resorted to by accoucheurs, and scarcely called for a formal statement from so eminent a practitioner.

Having observed practitioners who, after separating the limbs or head of a premature infant, while making traction, passed up the hand above the remaining parts, and brought them down in the hollow of the hand, he preferred performing this manœuvre for the entire child, without practising any preliminary traction. He adopts the same practice in the case of putrid children, and when the placenta or large coagula are detained. When there is a vertex presentation, and the external parts are insufficiently dilated, while the pains are

so severe as to threaten rupture, he makes pressure in the interval of the pains through the lower part of the rectum; and when the hastening of the passage of the head is a matter of urgency, he passes one or two well-oiled fingers high up into the rectum, directing pressure downwards and forwards. The anus is in these cases very yielding. In his Klinik he is in the habit of exploring pregnant women not only by the vagina, but by the rectum.

For several years past the author has had recourse to pressure, when it has become necessary to expedite foot presentations. He passes his hand along the spine of the child, places the index finger on the shoulder on one side of the neck, and the middle finger on the other side, and surrounding one arm by the thumb, and the other by the ring and middle fingers, makes pressure downwards; but how this movement is distinguished from traction it is not easy to see. When the child is large, has descended low down, or the parts of the mother resist, the application of the hand along the spine may require some manœuvring; and, other means failing, the child's body should be pushed back as far as the knees, in order to let the hand pass. This seems to us questionable practice; while other directions given by the author for acting by means of pressure upon the head in foot presentations are more ingenious than practicable. However, the author's chief object in the paper is merely to suggest the inquiry, how far the principle of pressure can be advantageously substituted for that of traction.

Art. 120.—*Unexpected Turning by external manipulation.* By Dr. Favenue, of Leschelles.

(*L'Abeille Méd.*, July 5, 1857; and *Gaz. Hébdom. de Méd. et Chir.*, July 31, 1857.)

This case is very curious, as showing the value of manipulation through the walls of the abdomen in the process of turning, for if this mode of treatment is effectual under circumstances such as are here described, what may not be expected where the membranes are not ruptured, and where proper promptness is employed.

Case.—Madame Jamart, of Benzoufolie, æt. 46, tall, strong, well-made, and already the mother of seven children. Dr. Favenue was called in consultation on the night of the 6th of March, 1855, and found that the patient had been in labour for forty-eight hours. He found also the left arm of the child protruding from the vulva, ecchymosed, deprived of epidermis, and limp like that of a dead child. The cord, also, was broken, and evidently great efforts had been made to procure delivery. The child appeared to have been dead for about twenty-four hours.

Under these circumstances, Dr. Favenue attempted to turn in the ordinary way, but the swollen and painful state of the vulva, and the contracted and ever-contracting state of the uterus, rendered the attempts altogether unsuccessful. All this time the patient was greatly exhausted, and the uterine pains were violent and incessant. Perforation seemed to be inevitable, but before having recourse to this severe measure, another attempt was made at turning, and in doing this the unoccupied hand of the operator was pressed upon the hypogastric region over the uterine tumour, when, to Dr. Favenue's

great surprise, a movement was felt within the uterus, and the protruded arm receded out of reach. Immediately afterwards, there followed a violent pain, and the lumbar region of the child was forced down into the vulva. This presentation, partly by manipulation with one hand through the walls of the abdomen, and partly by manipulation in the ordinary way, changed to that of the nates, and in the end the child, which was very large, was delivered without any great difficulty. Since this time the mother has been delivered of another child.

Art. 121.—*Case of partial recovery from Ruptured Uterus.* By Dr. Harvey.

(*Dublin Quarterly Journal of Medical Science*, Aug., 1857.)

The circumstance most worthy of attention in this case is the fact, that though leeching, mercurials by the skin, and fomentations, were employed as *auxiliaries*, the main treatment consisted in the full administration of opium, so as to keep the patient continually under its influence. The quantity taken was large, fifteen grains in the first twenty-four hours, and fifty grains in all during the first week of her illness, besides a considerable quantity in various forms,—and yet none of the poisonous effects of the drug were manifested. If it had not been for the dogged obstinacy of the woman she would have saved her life, as well as recovered from a ruptured uterus.

Case.—Mary M—, æt. 38, a spare but healthy-looking woman, was admitted into the Lying-in-Hospital, stated to have been in rather strong labour of her third child for the last thirty-six hours; former labours reported to have been natural, and of about nine hours' duration. When seen at 2 p.m., the pains were strong and frequent, and she felt debilitated. Pulse about 100, weak; bowels confined; no difficulty in passing urine; the head was found occupying the upper part of the cavity of the pelvis; presenting part œdematous, and making slow advance; liquor amnii had been dribbling away since the day before. She was ordered a turpentine enema and some broth. On being suddenly summoned, about half-past seven o'clock in the evening, we found the woman in a state of great prostration; the pains had ceased, and the pulse was exceedingly rapid and weak; the head of the child had receded out of the reach of the fingers, a large globular tumour was felt in the epigastrium, and there was also some abdominal tenderness. She was not conscious of any sudden change of movement having taken place. It appeared that she had a severe fall, with a basket of bread on her back, some weeks before.

On consultation with Drs. Finn and Tanner it was determined to attempt delivery by turning. This was easily accomplished, all being loose in the cavity of the uterus, the fœtus still remaining partially within it, its head lying in a lax pouch over the os pubis. There being some difficulty in extracting the head, it was perforated behind the ear, and delivery thus accomplished. The placenta followed readily, and there was little hæmorrhage throughout. It was considered advisable that I should re-introduce my hand, with a view to free any intestine that might have got engaged in the wound, when I discovered a large oblique rent in the right side of the fundus, situated anteriorly, at least three inches in extent; my fingers passed freely into the peritoneal cavity.

The patient was very much exhausted after the operation. The pulse was then 124, small and weak; surface perspiring, but not cold. There was none of the brown vomiting frequently observed in such cases. A moderately tight bandage was applied, and she was ordered to take two grains of opium immediately, and one grain every hour afterwards; to have arrow-root and weak tea.

We desired that we should be sent for if she were alive at seven o'clock in the morning.

Second day, 8 o'clock a.m.—A quiet night, but had little sleep; countenance not much sunken; abdominal tenderness rather increased; pulse 100, soft; tongue moist; has passed water. Powders regularly taken up to six o'clock.

2 o'clock p.m.—Has been dozing a good deal; tympanitis and rather more tenderness; pulse 104, soft, but rather fuller; respirations 18; refers all her uneasiness to the epigastrium. Twenty leeches to the abdomen, to be followed by fomentations, and afterwards a large poultice. Powders continued.

8¾ o'clock p.m.—Has continued to slumber occasionally, but is easily aroused, and perfectly collected; considerable relief from the leeching; tympanitic distension rather increased; countenance better. Has taken a good deal of arrow-root. No vomiting; urine freely passed. No powders have been taken since three o'clock, owing to a mistake. She is to take one grain of opium every second hour, and half a drachm of mercurial ointment is to be rubbed into the arms every eighth hour.

Third day, 8 o'clock a.m.—Slept a good deal; some vomiting of grass-green fluid this morning; lochia natural; pulse 108, soft. The powders to be continued every fourth hour; cataplasms and mercurial ointment to be continued.

9 o'clock p.m. — Occasional vomiting still; tympanitis and tenderness rather diminished; lies on both sides sometimes; urine free.

Fourth day, 11 o'clock a.m.—Some sleep, but countenance a good deal sunk this morning, with dampness and diminished warmth of skin; pulse 120, weaker; was allowed to indulge too freely in drinks, and has vomited considerably more in consequence. A blister to be applied to the abdomen, and if the vomiting continue in the evening, an injection of broth, with half a drachm of tincture of opium, to be administered; to take a dessert-spoonful of chicken broth every half-hour.

9 o'clock p.m.—Vomiting has ceased, tenderness and tympanitis perceptibly diminished; countenance improved; pulse 116, stronger; lochia have disappeared; dislikes her powders. To have the following pills:—Opium, twelve grains; extract of hemlock, a scruple; to be divided into twelve pills; one to be taken every third hour; the cataplasms and mercurial ointment to be continued; and to have an increased quantity of broth.

Fifth day, 11 o'clock a.m.—Night restless, and yet her countenance is improved; no appearance of mercurial action; blistered surface dressed with a drachm of mercurial ointment; frictions discontinued; pills to be continued.

9 o'clock p.m.—Puffing and tenderness less than at any time during her illness; complains slightly of her mouth: continue treatment.

Sixth day.—Three full, free, feculent evacuations; pulse 100, rather weak; tympanitis nearly gone; broth given more freely; biscuit with milk; the pills continued.

Seventh day.—Bowels free; tongue clean; little tenderness, except in the neighbourhood of the rent; pills to be omitted, and the following draught to

be taken at night:—Battley's sedative liquor of opium, twenty minims; camphor mixture, eleven drachms; syrup of orange, a drachm: mix.

Eighth day.—Slept well; no pain; tenderness nearly gone. Is tired of broth, tea, and biscuit; an egg beaten up with a dessert-spoonful of wine, as often as four times in the twenty-four hours.

Twelfth day.—Has continued to improve, with slight variations, during the last four days; debility now appears to be the only source of complaint. Has continued her draughts of Battley's solution, and her wine. The following pill to be taken every fourth hour:—Sulphate of quina, two grains; extract of gentian, two grains and half: mix.

Evening.—Pressing hard to be allowed home, and feigning inability to speak except when she wants to urge her point; bowels rather freer. Pills to be continued, and an opiate enema to be administered at night.

Thirteenth day.—Has obstinately refused her wine and pills since six o'clock last evening, and would not submit to the enema, notwithstanding which she has had a pretty good night; tongue natural; pulse 96, of fair strength. Discontented and difficult to manage all through her illness, she now resolutely refuses all nourishment and medicine, though told her recovery will as certainly follow compliance, as death must the contrary.

9 o'clock p.m.—In the afternoon, about half-past three o'clock, was induced by the priest to take some broth and a pill; she is, notwithstanding, evidently sinking to-night; the extremities are cold, and the pulse can scarcely be felt; she is perfectly collected, and keeps to her resolution.

Fourteenth day.—Died about four o'clock this morning.

Examination, sixteen hours after death.—A very hurried and unsatisfactory examination was, with great difficulty, obtained by candlelight, in the presence of her father and mother. There was no distension of the abdomen; intestines in the neigbourhood of uterus were extensively agglutinated to it, to each other, and to the abdominal parietes, by lymph in process of organization; a few small sacculi, formed by lymph inclosing spots of half an inch to an inch in diameter, where the intestines did not touch the parietes, contained purulent matter, but the quantity, in all, was by no means great; uterus about two inches and a half or three inches in diameter, adhering, on all sides, more or less to the neighbouring viscera; the rent, occupying right side of fundus, appeared to have closed throughout the whole of its length within, and through about two thirds of the substance of the uterus from within outwards; externally it had the appearance of a granulating, incised wound, which had not been evenly closed in the first instance, pouting a little towards the peritoneal surface; its length now appeared about an inch, or perhaps a little more, say two fifths, of the diameter of the uterus.

It was, of course, impossible to procure the specimen for preservation.

Art. 122.—*A new symptom of Rupture of the Uterus.* By Dr. M'Clintock.

(*Dublin Quarterly Journal of Medical Science*, Nov., 1857.)

At a recent meeting of the Dublin Obstetrical Society, Dr. M'Clintock related some cases of rupture of the uterus and of the vagina, to illustrate the obscurity which may occasionally surround the diagnosis of this accident when occurring during parturition. He particularly drew attention to a symptom observed in one of the cases, which he considered might hereafter be found of value as a

diagnostic of laceration of the uterus or vagina. This symptom was *an emphysematous state of the integuments covering the hypogastrium.* Its existence was detected by the stethoscope while searching for the fœtal heart. Examined for in this manner, the crepitation was loud and distinct, but to the hand it was not so obvious, except when firm pressure was made in the proper situation, then the crepitus was evident, and was recognised by Dr. G. Montgomery, and by several pupils who happened to be present at the case. The other symptoms present were of so ambiguous a kind that the possibility of rupture having taken place seemed doubtful. There was no prostration, no recession of the presenting part, and no cessation of the pains; the woman was able to be up and to walk about. Having ascertained that the emphysema had not extended downwards from the chest or neck, and that it was confined to the supra-pubic and iliac regions, Dr. M'Clintock inferred that the air had obtained an entrance through some rent in the genital passages. Acting upon this conclusion, the woman was delivered by craniotomy (the fœtal heart had not been heard for two hours previously). She sank rapidly after delivery, and died in a few hours. The left broad ligament was found emphysematous, and a tear existed in the left side of the uterus at the junction of the body and cervix. At some distance from this the peritoneum was found rent also, and a considerable quantity of blood had been effused into the abdominal cavity.

Art. 123.—*Gastrotomy by means of Caustics.*
By M. Martin, of Pont-de-Beauvoisin.

(*Gazette des Hôpitaux*, 138, 1856; and *Schmidt's Jahrb.*, Bd. lciv, No. 4, 1857.)

Case.—X. Y—, æt. 36, became pregnant for the second time towards the end of October, 1855. Her first pregnancy was fifteen years ago, when she gave birth, without any difficulty, to a healthy girl. On the 31st December, she was seized with colic-like pains in the region of the uterus, and again a little while afterwards; and after the second attack, a small tumour was found in the lower part of the abdomen, on the left side. Both these attacks were accompanied by inflammatory excitement. After this she menstruated regularly every month. At the beginning of August, and again on the 8th, about the natural term of pregnancy, the pangs of labour made their appearance, but in a somewhat irregular manner. At this time, extra-uterine pregnancy was detected. The os uteri was distensible, easily admitting the tips of three fingers; the uterus itself was empty, with the exception of some sanguinolent fluid which followed the withdrawal of the fingers, flattened, and pressed back into the right iliac fossa, where it formed a small tumour. A still larger tumour occupied the left side, extending upwards to the level of the false ribs, where, on examining carefully, a child's head could be detected. The mother said she had felt the movements of the child on the previous evening, but not during the day on which M. Martin examined her. M. Martin, moreover, was equally unable to provoke these movements, or to hear the beating of the fœtal heart.

Fearing by delaying longer to risk the rupture of the cyst containing the child, M. Martin decided upon performing the operation of gastrotomy by caustic, thinking that this mode of operating might be more successful than

that in which the knife was employed. The cyst was opened after five applications of the caustic, and without the loss of a single drop of blood. Caustic potass was resorted to in the first place, and applied twice; the Canquoin paste was used in the remaining three instances. In each case the old eschar was detached before reapplying the caustic. The line of application was parallel to the linea alba, a little distance from it on the left side, and to an extent of about fifty centimetres in length. The child was already dead. On attempts to extract it, some difficulty was experienced, and it was necessary to dismember it before delivery could be effected. After the operation the patient appears to have remained for some time in a state of collapse, but eventually she rallied. The wound was dressed with compresses soaked in vinegar, and these were not disturbed for three days. After this time, the dressings were renewed every day, and, as the case progressed, astringent injections (their nature is not specified) were associated with them. In three weeks the wound was nearly healed, and the patient was able to walk about the garden.

ART. 124.—*Cases of Sudden Death after Parturition, with air in the veins.* By Mr. MAY, Jun., Surgeon to the Royal Berkshire Hospital.

(*British Med. Journal*, June 6, 1857.)

Mr. May is of opinion, and his opinion has much to recommend it, that the entrance of air through the uterine veins was the cause of death in these cases. In a word, he is of opinion that these cases present an analogy with those in which air enters the veins during operations and experiments. In all these eleven cases death was more or less sudden, and always inexplicable by the post-mortem appearances; and the gas could not have been developed by putrefaction, seeing that most of the bodies were warm when examined.

"That death may result from the entrance of air into the veins during surgical operations, has long been known to the profession; but that it might be a cause of danger after parturition (as suggested by Legallois, in 1829) did not obtain the notice it deserved, until Dr. Cormack read a paper on the subject before the Westminster Medical Society, in 1850. I propose to allude briefly to the cases narrated by Dr. Cormack, and then to give the details of three that have occurred in this neighbourhood.

"In 1841, Dr. Bessems attended a labour, in which there was hæmorrhage, with retention of placenta. On the fourth day after her confinement, whilst an injection was being thrown into the uterus, she suddenly exclaimed that she was suffocated, and died in three minutes. Air was found in the heart and veins.

"M. Lionet, of Corbeil, attended a lady, aged 27. She was much frightened during the last month of her pregnancy, and did not completely recover her strength; but her labour was natural and not attended with hæmorrhage. She soon, however, became faint, breathed with difficulty, and expired five hours after delivery. Air was found in the heart and in the cerebral veins.

"Dr. Wintrich, in 1848, published a case of rapid death after parturition. Convulsive movements and suffocation followed the expul-

sion of the infant, and partial separation of the placenta. Air was found in the venous system.

"Professor Simpson mentions a case in which death occurred a few hours after a delivery, accompanied with hæmorrhage and alternate contractions and relaxations of the uterus. Air was found to have entered through the uterine veins.

"Dr. Lever mentions three cases; in all of them there was hæmorrhage, and death a few hours after labour. Air was found in the uterine and other veins.

"In 1850, Mr. Berry, of Birmingham, attended a primapara, aged 22. There was little hæmorrhage, and she appeared to be going on well for six hours; she then became affected with difficulty of breathing and faintness, and expired in less than an hour. Air was found in the heart. The uterine veins were patulous.

"Case 1.—The case of which an abstract is here given, was read before the Reading Pathological Society, by Mr. Taylor, of Wargrave.

"In September, 1841, Mrs. ——, æt. 30, was taken in labour with her third child. The labour progressed naturally; but no urine having been passed, Mr. Taylor was in the act of introducing a catheter, when a severe pain occurred. The liquor amnii was discharged to the amount of three fourths of a pint. The woman suddenly exclaimed, 'Oh! how faint I feel,' was convulsed for a moment, and expired. By the last pain the head had been forced partly from the outlet. An attempt was made to remove the child without success.

"A post-mortem examination was made forty-eight hours after death. The uterus extended above the umbilicus. The placenta occupied the anterior surface from pubis to umbilicus; no portion was separated. A few days before her labour she had a copious discharge of blood. There was little blood in the uterus. The bladder was empty. The lower vena cava was empty. The heart was healthy. The right auricle was thin, almost transparent, and distended with air. Hardly a trace of blood existed in the heart. The brane and membranes were healthy. In the spine, between the theca and the cord, there was considerable effusion of fluid blood, but none within the sheath.

"Case 2.—I am indebted to Mr. Smith, of Whitchurch, for the details of the following case.

"Mrs. T—, between 38 and 40 years of age, was confined of her sixth child, a male, on the morning of May 7th, 1852, about 8 a.m., and her attendant left her shortly afterwards, as he said, very comfortable. As, however, she had severe after-pains, an opiate was sent her. Mr. Smith was summoned to her about 2 p.m.; and on his arrival, he found she had just died. She complained of excessively severe after-pains, together with great oppression about the chest, and feelings of sinking and exhaustion and extreme restlessness. In answer to inquiries as to whether there had been any hæmorrhage, the attendants stated that there had not.

"A post-mortem examination was performed the same evening, the body not being quite cold. The abdominal viscera were all free from disease. On opening the uterus, which was large, there was found a considerable quantity of coagulated blood; but not by any means enough to satisfy one that loss of blood was the cause of death. The uterus contained also a considerable piece of the placenta adhering to its internal surface. In the chest were old adhesions between the pleura costalis and pulmonalis. The heart appeared distended; not that it was enlarged, properly so called, but that it had an

appearance of distension, which was evidently on the right side of the organ. On opening the right auricle, a quantity of air escaped with a sort of little puff, and the organ was at once reduced to its proper dimensions. No disease was found in its substance or valves. The left ventricle contained a small clot.

"Case 3.—In the autumn of 1855, Mrs. E—, æt. 28, was delivered of her third child, after a natural labour. She had become sufficiently convalescent to resume her household duties; but on the eighth day she was taken suddenly ill, and expired before Mr. Walford arrived.

"I assisted at the post-mortem examination the following day. No unusual appearance was observed, until the liver was sliced; it was then noticed that frothy blood escaped, and, a further examination being made, air was discovered in the vena cava inferior and vena portæ; and the right side of the heart was distended with frothy blood. The uterus was of its usual size for the eighth day. There was no sign of decomposition about the body."

Art. 125.—*Statistics of Placenta Prævia.* By Dr. Schwarz.

(*Monatsch. für Geburtskunde*, Bd. viii, 1857.)

Dr. Schwarz, of Fulda, in Hesse-Cassel, having heard the frequency of placenta prævia stated in a medical society as far greater than he had hitherto believed it to be, examined in reference to this point the official returns made by the Hesse practitioners. These were supplied by 150 accoucheurs, during a period of twenty years, *i. e.*, from 1835 to 1854 inclusive. They related to 519,328 births, and among these were only 332 cases of placenta prævia—the numbers varying from 8 to 28 per annum. Of these 332 cases, 246 women recovered and 86 died: 251 children were born dead, and 85 were born living. In 40 instances the women were primiparous and in 292 pluriparous. Podalic version was performed in 259 cases, and cephalic version in 7; while in 23 instances the children were removed by the forceps, in 6 by craniotomy, and in 13 by post-mortem Cæsarian section. In 8 instances the placenta was removed, and in 16 the plug was resorted to.

Art. 126.—*Statistics of Coiling of the Funis.* By Dr. Weidemann.

(*Monatsch. für Geburtskunde*, Bd. viii; and *Medical Times and Gaz.*, July, 1857.)

Dr. Weidemann states that among 28,430 deliveries the funis has been found coiled around the child in 3379 instances. In 3230 of these it was coiled around the neck, and in 149 around other parts of the body. Of the 3230 cases, 2546 consisted in a simple coil, and in 684 there were several coils. In relation to the causes of this occurrence, it is interesting to notice that of 1788 cases occurring at the Marburg Midwifery Institution, the funis was in 80 (1 : 22·2) under 15 inches, and in 183 above 25 inches (1 : 9·71) in length; that in 54 (1 : 33) there was very little liquor amnii, and in 41 (1 : 43·6) there was very much; in 165 (1 : 10·8) the child was under 5 pounds weight, and in 28 (1 : 61·7) it was above 8 pounds. Therefore, among the favouring

causes of the occurrence may be mentioned a long funis, abundance of liquor amnii, and a small child.

Among 2930 infants born at Marburg, 182 (1 : 16·09) were dead, and 251 (1 : 12·41) were still-born. Of 725 born with coiled funis, 45 (1 : 16·11) were dead, and 72 (1 : 10·06) were still-born. Of the 45 dead-born, in 18 only could the death be referred to this alone, *i. e.*, only 1 : 40·2 in the 725 examples of coiling. From an examination of the figures derived from the midwifery institutions at Dresden, Göttingen, Würzburg, Berlin, and Marburg, it results that of 13,720 new-born infants, 902 (1 : 15·21) were born dead; while in the 1217 instances of coiling of the funis, 31 children were born dead, whose death could be attributed to that circumstance, giving a proportion of 1 : 39 to the coilings, and 1 : 19 to the number born dead.

Thus, as (1) the 16th child among new-born children in general, as well as among those in which coiling has taken place, is born dead; as (2) the 12th child among the new-born in general, and the 10th among those around whom the funis is coiled is born still-born; and as (3) in 1 child in 40 only can this coiling be regarded as really the cause of death, it is evident that this accident does not occupy a very prominent place.

Art. 127.—*Fracture of the Sternum occurring during Labour.* By Drs. Lucchetti and Posta.

(*Bull. delle Scienze Med. di Bologna*, April, 1857; and *Dublin Quarterly Journal of Med. Science*, Nov., 1857.)

Case.—Signora Maria Grossi, of Roccagulielma, in the district of Gaeta, æt. 25, of a sanguineo-nervous temperament, well formed both as to the pelvis and her person generally, having arrived at the full term of her first pregnancy, began, on the morning of the first day of the present year, 1857, to feel the pains of labour, which increased gradually in frequency and intensity, until at three o'clock in the afternoon the period of expulsion had arrived. The patient, uniting her voluntary efforts to the spontaneous and natural contractions of the uterus and of the abdominal muscles suddenly perceived a crash and intense pain in the antero-superior region of the chest, and in a few moments gave birth to a living female child.

The expulsion of the placenta was easy, and unattended with inconvenience; however, after the labour the pain in the same region increased so much that the patient's relatives were obliged to apply for medical aid.

Although fracture of the sternum is most easily diagnosed, manifesting itself, in addition to the phenomena of disturbed respiration, by signs evident to the touch, the eye, and the ear, the accident was considered to be one of simple muscular strain, was neglected for a week, and the patient was not subjected to treatment.

The symptoms of the thoracic lesion becoming threatening, Dr. Lucchetti was called in, who, arriving on the evening of the seventh day after delivery, found the patient sitting up in bed, unable to lie down either on her side or back, nor could she, without suffering, raise her arms; her face was turgid and almost livid, her tongue was red, and somewhat loaded. There was very high fever; the pulse was hard, full, frequent, and occasionally dicrotous; there

was urgent thirst; the bowels were constipated; the secretion of milk was regular. Respiration was difficult and unequal, and was attended with so much pain, and such a sense of weight and oppression, as to lead to the apprehension that suffocation was imminent. The patient was tormented with a troublesome and frequent cough, every return of which renewed the sense of crashing and the intense pain in the chest, a little yellowish mucus being with difficulty expectorated. The sweat of agony appeared at uncertain intervals upon the forehead and neck, but the skin of the rest of the body was unusually dry. The seat of pain, which was precisely the middle of the upper part of the sternum, presented an elevation caused by the fracture of that part of the bone, the superior broken portion projecting, while the inferior was depressed. The shocks of the cough moved the bony fragments, and the crepitation, which is the surest indication of fracture, was audible to the bystanders; hence it was evident that the sternum had been fractured transversely in its upper part.

In the evening an emulsion of gum-arabic with syrup of digitalis was prescribed, and several leeches were applied to the affected part. These means were attended wtth slight and transient relief; but great advantage was obtained during the night by a copious bleeding from the arm, as, in consequence of the diminution of the cough, and the moderation of the more troublesome symptoms produced thereby, the patient was able to enjoy a few hours' sleep.

The following day surgeon Posta being called into consultation, also recognised the fracture, which had not yet been reduced; this was now done with the assistance of Dr. Lucchetti and a young student in medicine, Andrea Winckler, after which a suitable bandage was applied, &c.

At the end of thirty-five days we found Signora Grossi cured, a slight elevation alone remaining at the seat of fracture, produced by a strong and consolidated callus: she is now able to attend to her domestic duties.

Art. 128.—*The excitation of Fœtal Movements by cold.* By Dr. Sinclair.

(*Dublin Quarterly Journal of Med. Science*, Nov., 1857.)

The following remarks are from the 'Report of the Dublin Obstetrical Society:'

"Professor Simpson and Dr. Tyler Smith have done a great deal lately towards depriving us of one of the most useful signs of pregnancy. Both deny that the cold hand applied to the abdominal walls of the mother has any power in producing movements in the fœtus.

"Professor Simpson says*—'It is very generally believed by accoucheurs that the sudden application of a cold hand, or other similar body, to the cutaneous surface of the abdomen of a woman advanced in utero-gestation, is capable of exciting movements on the part of the fœtus; and such application has been often recommended as one of the simplest and best means of ascertaining, in doubtful cases of pregnancy, both the existence and vitality of the child.† But as there is no direct organic communication between the abdominal walls of the mother and the body of the fœtus, or between the

* 'Obstetric Works,' vol. ii, p. 149.

† See, for example, 'Montgomery's Exposition,' &c., p. 89, &c.

nervous system of the mother and that of the child in utero, the power of exciting muscular movements in the latter by a sudden impression of cold upon any part of the abdominal maternal skin, seems, physiologically considered, an impossibility; and clinical observation and direct experiment seem to me to prove the whole idea to be fallacious.'

"I hope before the conclusion of this paper to show that it is not impossible to account, physiologically, for the muscular movements of the fœtus which follow the application of cold to the abdominal maternal skin. Before proceeding to this, however, let us examine Dr. Tyler Smith's opinion. He says*—'A very common plan is to place the cold hand, or the hand just taken out of cold water, upon the abdomen, with a view to excite the movements of the fœtus, for the purpose of diagnosis in suspected pregnancy. It is imagined that the fœtus is affected by the temperature of the external hand. When we consider, however, that the integuments and abdominal muscles, the uterus, membranes, and the liquor amnii, all intervene betwixt the cold hand and the fœtus, it is rather too much to suppose that any direct thermometric influence can be exerted on the embryo by such means. A reflex contraction of the uterus itself, from the application of cold to the abdomen, is readily comprehended; and no sound physiologist would think of giving any other solution to such movements, if the experiments were performed either during or soon after parturition. Why, then, accept such a different explanation of the movements of pregnancy?'

"I hope I shall not be considered an unsound physiologist if I now proceed to ask you to accept a different explanation.

"That fœtal movements may be produced by cold applied to the walls of the abdomen has been empirically acknowledged as true for a long period. The time has now come when it must be substantiated by science, or fall.

"The fœtal movements are produced by pressure.

"1st. The sources of pressure are—

"*a.* The hand of the operator.

"*b.* The muscles of respiration.

"*c.* The uterus.

"*Pressure from the hand.*—The degree of pressure will vary with every experimentalist, some having light, others heavy hands. In cases where the walls of the abdomen are very fat, the pressure required to distinguish the uterus will be greater. The effect of the hand has hitherto, however, been insignificant when compared with the other two sources of pressure, as cold alone has been considered the chief agent in producing the motions of the fœtus. The pressure of the hand is much lessened by having to pass through the walls of the abdomen, the parietes of the uterus, and the liquor amnii. Notwithstanding this, Professor Simpson considers, when fœtal movements do occur, that the pressure of the hand upon the fœtus is their only cause.

"*Pressure from the muscles of respiration.*—When the hand, dipped in water of a low temperature, is applied to the abdomen suddenly

* 'On Parturition and Obstetrics,' p. 99.

and unexpectedly, the sensation of cold produces a violent act of inspiration, which is thoracic in its character; for, instead of the abdominal muscles relaxing, as is usually the case when the diaphragm descends, they contract, and consequently the contents of the abdomen are firmly compressed. Cases are on record in which, from the violent contraction of the abdominal muscles, the viscera have been ruptured. It is easy, therefore, to see that the pressure upon the uterus, obtained by causing the diaphragm to descend, and the abdominal muscles to contract, may be very considerable, and it is also evident that the pressure thus caused must act more completely than that which is obtained by the hand alone. The next source of pressure is from *the uterus* itself. It is generally acknowledged that cold applied to the abdomen produces a reflex contraction of the uterus. Acting upon this principle, cold is used for the purpose of arresting 'flooding.' And cold water, injected into the vagina, is sometimes employed to bring on premature labour. Besides this, the sudden application of cold produces an emotion of surprise; and it is well known that emotions sometimes react so powerfully upon the uterus as to cause abortion. It may be stated as a fact, then, that the uterus contracts and exerts a pressure upon its contents when cold is applied to the abdomen.

"I have only now to point out how the pressure of the hand, the pressure of the muscles of respiration, and the pressure of the uterus, produce the fœtal movements.

"2d. Pressure produces fœtal movements—

"*a.* By causing excito-motory actions in the fœtus.

"*b.* By impeding the circulation in the fœtus.

"*Excito-motory actions in the fœtus.*—Professor Simpson has pointed out that the parts of the fœtus which lie in contact with the uterine walls, and are consequently the most liable to be irritated, viz., the sides, knees, and feet, are also the parts most susceptible to the excito-motory stimulus.* This curious fact is the key to most of the fœtal movements. If the hand, abdominal muscles, or uterus, press in an unusual manner upon any part of the fœtus, a reflex motor action will be produced tending to remove that pressure. This, then, is one of the ways in which the wet hand applied to the abdomen produces fœtal movements. The next, though less evident, has, I believe, considerable effect in their production, viz., *by impeding the circulation in the fœtus.* The circulation in the fœtus is impeded by the pressure upon, and the contraction of, the uterus, which, combined, not only partially close the utero-placental vessels and prevent the proper oxygenation of the blood, but also compress the placental mass and umbilical cord so as to obstruct its normal current. These two causes produce in the fœtus a partial and temporary state of asphyxia, in which condition Dr. Marshall Hall has shown that the reflex nervous system is more easily excited. This condition, therefore, favours the production of excito-motory actions in the fœtus when pressed upon from without. And, besides this, convulsive movements take place in the fœtus when in a state of asphyxia, which, when added to those

* 'Obstetric Works,' vol. ii, p. 116.

whose origin is external or reflex, help materially to prove the existence of a living fœtus in the uterus.

"In conclusion, I would say that my intention has not been to overrate the value of the 'cold hand' test, but rather to prevent its falling into entire disuse. It must always be remembered that motions which sometimes take place in the stomach, bowels, abdominal walls, and uterus, may be mistaken for the movements of the fœtus; a little skill, however, will generally enable the operator to distinguish which are the true and which are the spurious."

(B) CONCERNING DISEASES OF WOMEN.

ART. 129.—*Cases of Retention of the Menses relieved by puncture through the rectum.* By Dr. OLDHAM, Physician-Accoucheur to Guy's Hospital.

(*Guy's Hospital Reports*, Third Series, vol. iii, 1857.)

The two following cases are instances of retention of the menses within the cavity of the uterus, which were relieved by puncture through the rectum; the first case being the result of congenital absence of the vagina; the second, the closure of the vagina after labour, by adhesion of its walls, and cicatrization.

CASE 1.—*Congenital absence of vagina; menses retained in the cavity of the uterus; relief by puncture through the rectum.*—Susan W—, æt. 23, was admitted under my care at Guy's Hospital in March, 1850. She was a young person of slender form but womanly development, who had never menstruated. When she came into the hospital her health was feeble, which she ascribed to a severe illness which followed a surgical operation to open a passage to the uterus from the vulva, which had been unsuccessfully attempted, and from which she had not recovered.

She had lived at home in the Isle of Sheppey, and between 16 and 17 years of age the general marks of puberty were manifested, but the permanent absence of menstruation and general delicacy of health had induced her to apply for medical advice both at home and at the hospitals in London, and a malformation of the genital organs had been discovered.

When she was in bed, and the usual examination of the sexual organs was made with the index finger, it passed without difficulty into a passage, at the top of which was a globular, firm swelling, like a distended uterus, but neither cervix nor os uteri could be felt. This canal, however, which thus examined I had taken for the vagina, I subsequently discovered to be the urethra, the orifice of which was remarkably wide, and three quarters of an inch in length, and the canal itself distensible without effort and without pain, and yet it retained such perfect tonicity that she had always been able to hold her water the usual time. My suspicions were first excited by noticing a discharge of fluid follow the removal of the finger, which had a faint smell of urine, and on inspecting the organs I found that the site of the ostium vaginæ was occupied by this lengthened aperture of the urethra, and that between it and the fourchette there was scarcely any space, and not a trace of vaginal opening. The external organs were normal in their formation, but the most careful exploration of the intermediate space between the

urethra and the rectum—(which could in this instance be made with a finger in each canal)—failed to detect any trace of a vagina, and there was no doubt in my mind of its congenital absence. Rising above the pubes, and occupying a central position, was a globular swelling about the size of a cocoa-nut, which in the course of several months that I observed it, was found to be more defined and hard at one time than another; but generally it was not painful when gathered in the hand, or when pressed with the fingers. This swelling was the uterus distended by menstrual fluid, and a finger in the rectum could detect a central indentation in a firm and rather large cervix, which marked the os uteri. By moving this tumour above, the part below moved correspondingly, and the result of several investigations was the conviction that the uterus distended with menstrual fluid lay in the same direction as the pregnant uterus between the fourth and fifth month, with the os and cervix directed towards the rectum and accessible from it; that the walls of the rectum and urethra were in close approximation, and that the absence of any portion of a vaginal canal below the uterus had compelled the cavity of the body of the uterus to yield to the accumulating menstrual fluid and to enclose it.

The symptoms which had attended this accumulation were not marked by any great regularity of periodical menstrual suffering. The intervals of quiescence had been sometimes protracted to five months, and sometimes indications of menstrual action, such as lumbar, abdominal, and pelvic pain, abdominal fulness, with nausea, or even vomiting, lasting for two or three days, would appear at intervals of five, six, or eight weeks; but during the time she was in the hospital, and before it, regular monthly action was not clearly made out. Her general health had been indifferent, with a tendency to chlorosis, and no doubt the absence of menstrual effort really marked intervals of amenorrhœa. Occasionally, the local sufferings were very severe; distinct paroxysms of uterine pain, causing the greatest distress, and attended with constant vomiting, and lasting for three or four days, leaving her much exhausted. For the first three mouths after her admission into Guy's, the local pains had not been severe; but as her health improved, she had been seized with more marked paroxysms of uterine suffering, during which the uterus contracted rhythmically, and she really underwent all the sufferings of a resisted menstrual labour, for the subjugation of which she took morphia rather freely.

August 14th, 1850.—It was in an attack of this kind of unusual severity, which had lasted four days, during which her sufferings were extreme, and that, too, in spite of large and repeated doses of opium, that I resolved to penetrate the os uteri through the rectum, and so give exit to the menstrual discharge. For this purpose I introduced a curved trocar and canula, with which surgeons puncture the male bladder, through the rectum to the os uteri, and a quantity of treacly-looking blood immediately followed. The operation was painless, but the instrument was not long enough for the purpose, and on withdrawing the trocar, the canula came out from the uterus. Still, the puncture which had been made allowed the menstrual fluid to escape slowly, and its evacuation was attended with great relief, and she passed a comfortable night. Early the following morning a quantity, estimated at ten ounces, of the same fluid was discharged, with some fæces, and again the third day, after which it ceased. The uterine tumour was perceptibly diminished in size, but still to be felt above the pubes, though no longer painful. No bad symptoms followed the operation, and she went home in a week, with an injunction to return to the hospital on the recurrence of menstrual suffering.

On the 19th of September she was seized with the same severe pains, during which the uterus could be felt to contract in paroxysms, with incessant vomitings and great distress. The opening which had been made with the trochar had closed, but the os uteri felt more open, so that the finger, carrying the rectum before it, could be made to enter it, and during the severity of a pain, it was obviously stretched by the fluid being pressed into it. On this occasion I guarded the lower part of a sharp-pointed bistoury with lint wrapped round it, leaving about an inch from the point free, and flattening this against the forefinger of the left hand, I introduced it into the os uteri, cutting an aperture of about half an inch. A quantity of menstrual fluid was at once released, with immediate relief to her suffering; and altogether, on this and the following day, about a pint of the collected menses escaped, with a marked reduction in the size of the uterine tumour, which still remained, however, above the pelvis. No pain or distress accompanied or followed this operation, and no attempt was made to keep the aperture open. Warm water enemata were alone employed.

On two other occasions I performed the same operation, making in all four, with the same ease, the same relief, and the same freedom from subsequent inflammation. Her general health improved speedily. After the fourth operation, the opening remained patent, although no means had been employed for the purpose, and for the future she menstruated through the rectum without pain or inconvenience, and with considerable regularity. She continued to reside at home for some time, and then went to America with her parents. She was cautioned by me never to marry.

A report from her in June, 1851, states:

"I am pleased to relate that, on the 8th of May, I was taken unwell, and have been so twice regular to the month. I suffered but little pain. I should say, as near as I can judge, the first time there was a pint and a half passed, and the second time about half a pint. My general health seems very well."

I examined the abdomen in July, and found the uterine swelling much reduced. The opening through the rectum could be felt by the finger, but I abstained from probing it.

The last report I have received of this patient is from Cooperstown, January 13th, 1852, in which she says, writing to a relative:

"I am happy to tell you, in myself, that I have found no difficulty in wanting any relief. I still continue with the same relief."

Case 2.—*Closure of the vagina by strong adhesion and cicatrization; menses retained in the cavity of the uterus; puncture per rectum.*—A married woman, æt. 36, was admitted under my care into Guy's, May 21st, 1851. She had had three children and several abortions. She had not menstruated for five months, and her medical man had discovered that the vagina was closed, and he requested me to admit her into the hospital. The account which she gave was, that her last child was born four years before, with instruments, and that she had menstruated regularly until January, 1851, when it had ceased, and since then she had been subject about every month to aggravated pains in the loins and abdomen, and that sexual coitus could not be accomplished. No coherent or satisfactory history could be obtained.

I found, on examination, that the vaginal canal was obliterated from about three quarters of an inch of its orifice, by a firm union of its walls with a good deal of cicatrix tissue; and that this union was so consolidated, as to resist the firmest pressure of the finger, and no break or aperture could be discovered. By rectum the os uteri could be detected pointing backwards towards the bowel; it was closed, and there was no swelling below it. Above the

brim of the pelvis the body of the uterus could be felt, clearly defined; which, on being pressed downwards, imparted a movement simultaneously to the os as felt per rectum. The uterus reached six inches above the pubes, and was more vertically directed than in the gravid state, and the intestines were before it, so that abdominal palpation produced a tympanitic sound. The mammæ were shrunk. The diagnosis formed in this case was, that the uterus was distended with menstrual fluid, which could not escape on account of the closure by adhesion and cicatrization of the upper three fourths of the vagina.

At first, I hoped in this case to be able to find some small opening, which, on being enlarged, might restore a channel per vaginam for the exit of the menses; but, after repeated investigations, I found no trace of such an aperture; and the prospect of dividing the adherent walls with a knife, however carefully conducted, was too hazardous, from the danger to the contiguous viscera, to be encountered. Under these circumstances I resolved to puncture the uterus per rectum, and this was done with a sharp-pointed bistoury without difficulty. A quantity of the peculiar dark treacly kind of retained menses at once escaped; and I passed the tip of my finger into the cut opening, and slightly tore it. On the following day she passed, as near as could be ascertained, a pint and a half of the same dark fluid, mixed with fæces, and the abdominal swelling was much reduced. There was some pain in the right iliac region on the third day, with tenderness on pressure, but it passed off under the influence of some Dover's powder, with fomentations and poultices. She remained in the hospital for a fortnight, and then went out, promising to attend as an out-patient, but she never made her appearance. When she left, the opening in the rectum had not closed.

"The particular point in practice," says Dr. Oldham, "which these cases illustrate is, the ease, safety, and success with which the uterus, distended with menstrual fluid, may be relieved by puncture through the rectum, when the organic defect is a congenital absence of the vagina, or its occlusion by adhesion and cicatrization of its walls. Other operations designed to separate the interspace between the urethra and rectum, either by the knife or by traction, and so form a vagina in the connecting tissue, have been designed and practised by different surgeons, sometimes with success, at others with a fatal issue. These operations, in the most skilful hands, are difficult to accomplish, and most hazardous to the patient,* and they have been deliberately rejected, in the judgment of competent men, as being too perilous to be justified. As a channel for the flow of the menses, there can be no compensating advantage in an artificial vagina over an opening through the rectum. It is true that, if the patient escape the dangers of having an opening made into the urethra, bladder, or rectum, and these organs are left with their functional power unimpaired, the channel thus formed might perhaps be kept open more readily than by the other method. But puncture per rectum is so slight and feasible an operation, that I have preferred to repeat it as the occasion may require, to exciting the irritation, and possibly the inflammation, which attempts to keep the opening patent would occasion, especially too when this may, as in Case 1, spontaneously occur. To attempt anything beyond making an efficient

* *Vide* Amussat's case, 'Gaz. Med.,' Dec., 1835.

outlet for the menses, that is, to expect to form a vagina which shall admit of marriage and child-birth is, in my opinion, to try for more than surgery can do. It appears to me to be impossible for a passage formed in the connecting tissue between two canals, to perform the entire functions of the vagina, and it is far better that marriage should be known to be a physical impossibility, than that its consummation should provoke disgust, disappointment, and estrangement.

"The large size of the urethral canal in Case 1, which allowed the finger to pass into it without pain, and yet was unattended with incontinence of urine, is worthy of notice. A similar formation of the canal attended a case of imperforate vagina, which I published in 'Guy's Reports' (Series II) vol. vi, p. 354. In both these instances the extreme width was congenital and part of the deformity, and not the result of artificial dilatation.

"The collection of menstrual fluid within the cavity of the uterus was not so great in Case 1 as to represent the sum of a series of monthly fluxes from the date of its first commencement to the time of the operation. There were undoubtedly long intervals of amenorrhœa, and the feeble state of health which generally accompanies menstrual retention would favour the suspension of the flow. On one occasion, when the patient had a slight attack of fever, I felt persuaded that the contents of the uterine tumour absolutely diminished. In the physical diagnosis of these cases of entire absence of the vagina, as contrasted with a partial development of the canal or a central closure of it, I lay great stress on being able to feel the os uteri through the rectum in a closed state. If there be a portion of the vaginal canal developed above, the menstrual fluid is safe to pass into it, and, as it collects, to bulge it out, and by degrees to stretch out the os uteri and cervix, and last of all the cavity of the body of the uterus. In a case which was published in an early number of the 'Guy's Reports,' with a drawing, this is admirably shown, and the preparation which it fell to my lot to be able to procure, is in the museum of the hospital."*

ART. 130.—*On some of the prevalent errors in relation to the predisposition to Hysteria.* By M. BRIQUET.

(*L'Union Médicale*, Nos. 36, 89, and 40; and *Med. Times and Gazette*, Oct. 31, 1857.)

M. Briquet believes that most writers have been indebted more to their imaginations than to the observation of facts for the pictures they have drawn of this disease. It has been attributed by most of them either to unsatisfied sexual desires, or to excessive excitement of the uterus and its appendages, and a fanciful etiology to correspond has been invented. The object of this paper is to show that these and other preconceived ideas have no solid foundation in fact.

1. The *hysterical constitution*, about which so many positive assertions have been made, has in fact no existence—the affection occurring

* Vol. ii (Series i), p. 244.

in women having the most opposite external appearances. The author examined 425 cases of hysteria in this point of view: of these, as regards height, 127 were tall, 168 medium size, and 106 short; as to strength, 99 were strong, 36 medium, and 26 weak; as to flesh, 194 were stout, 106 medium, and 92 thin and spare; as to colour, 220 were fair, and 164 dark, 27 having the hair light, 39 black, 177 light chesnut, and 188 deep chesnut. In 168 the face was pale or brownish, and in 174 fresh coloured. Thus it will be seen these were the ordinary varieties met with among women in general.

2. The *temperament* is also various enough.—The following is the classification M. Briquet made of 383 cases. In 143 it was lymphatico-sanguineous, in 125 lymphatic, in 91 nervous or lymphatico-nervous, in 12 bilious, and in 11 sanguineous. These are evidently very much the proportions that are found in females of from 15 to 30, part inhabitants of the country, and part of the towns, as was the case with these. At all events, there is no temperament that can properly be called hysterical.

3. *Moral disposition.*—That which is not discoverable in the physical constitution of hysterical females is, however, very evident in their moral disposition. So much is this the case, that of 430 cases occurring to the author, not more than 20 at the utmost have not manifested it. The characteristic of this is marked *impressionability*, foreshadowed in childhood by great timidity, excessive susceptibility to blame, and a disposition to shed tears easily.

4. *Mode of life.*—Another of the axioms that has been laid down as undoubted, is, that hysteria is the prerogative of the wealthy and luxurious, and that poverty is a security against its occurrence. It is a complete error; the common people being the subjects of hysteria in almost a double proportion to the other classes. At a particular epoch M. Briquet visited all the female patients in the medical and surgical wards of La Charité, with the exception of those suffering from epilepsy, apoplexy, insanity or delirium. The number amounted to 203, and of these 65 were hysterical (38 with convulsive paroxysms), 49 were impressionable, and 89 only were neither hysterical nor impressionable. Thus, among the common people there was 1 woman in 5 who had hysterical paroxysms, and 3 out of every 8 were the subjects of hysteria. So far from being exaggerated, the statement is rather below the truth. But where is the practitioner who meets with 3 cases of hysteria among 8 of his private patients? According to the experience of many M. Briquet has consulted upon the subject, there is about 1 in 8 or 10 in the easy classes of society, not alluding to the very highest. The charms and simplicity of a country life, too, have been sufficiently praised, and nervous diseases have been said to be the almost exclusive affliction of civic life. M. Forget, in 1847, somewhat startled this belief by showing how frequently hysteria occurs among the simple Alsatian peasantry. M. Briquet has obtained cognizance of the place of abode and of early education in 324 cases of hysteria, and of these 168 were town born and bred, and 156 from the country—the majority of these latter having in childhood laboured in the fields. In the case of 42 of these country girls their mothers had been hysterical, 29 suffering from paroxysmal attacks. Professor

Lebert, of Zurich, also assures the author that hysteria is just as often seen in the poverty stricken cantons of Switzerland as in the most flourishing ones. A too tender and luxurious education has been assigned as a predisposing cause; but of 81 cases of hysteria occurring before the age of puberty, in 21 the harsh treatment they had been subjected to was the principal cause of the disease. A third portion of the author's collection of cases had been submitted to ill-treatment or privation during childhood. In place of a tender education being assigned as a predisposing cause, it would be more just to thus stigmatize a harsh one.

5. *Continence* has been stated by many authors as an unnatural condition, predisposing to hysteria; but when it is remembered that the majority of cases occur between 12 and 20, we naturally ask at what age it becomes unnatural, as also for the explanation of the occurrence of the disease in 86 children under 12 years of age. Various authors since the time of Galen have deplored the fate of widows, as the necessary victims of hysteria; but in point of fact their solicitude has been little needed, inasmuch as among 375 cases collected by Landovzy only 12 of the subjects were widows, as were only 14 in the author's own 430 cases, *i. e.*, 26 in 800 cases, or 1 in 30. Of the author's 14 cases, too, in 6 the hysteria appeared on the day of the husband's death, and in 4 during the first month after it, and should surely with more probability be referred to moral emotion. Hysteria has been said to be, on the one hand, common among nuns, and, on the other, rare among women who give free vent to their sexual desire. But in point of fact it is rare in convents, and is chiefly found in those in which there is great fasting and maceration. The reverse position so strongly maintained by authors may also be disposed of. Thus of 300 hysterical females above the age of 15, 139 were married or kept women, and among them had 367 children, not counting miscarriages. Among the 161 remaining, very few resigned themselves to continence. At the Lourcine, where syphilitic workwomen and servants repair, among 424 patients, 169 were hysterical. As to prostitutes, of 197 applying to St. Lazare on account of syphilis, 106 were hysterical, 28 very impressionable, and 65 neither hysterical nor impressionable. It results from all this that continent women are rarely hysterical, those who do not observe continence are frequently the subjects of hysteria, while those who pursue the extreme of incontinence are the most liable of all. The reason is obvious. Among these different classes of women, the first lead peaceable lives, the second have much to go through, while the last are a prey to frequent and violent emotions. Next we may consider the effects of marriage on hysterical women, which, to judge from the statements made, have been truly remarkable. But among M. Landovzy's and the author's 800 cases, in only 29 instances did decided advantage follow marriage, notwithstanding the complex character of the modifications ensuing upon this state.

6. *Menstruation and affections of the uterus.*—This class of influences has been raised to the highest rank by those writers who are determined at placing the seat of hysteria in the uterus. 1. This has been supported by the supposed effects of normal or abnormal conditions of

the menstruation. From the author's observations, however, made on 411 hysterical women, in but 136 had there been any derangement of the menses. Of 237 deliveries of hysterical women, in but 12 were there any convulsive paroxysms, some of which too might have been examples of eclampsia. 2. According to authors it is common to observe hysteria in affections of the uterus. Now these diseases are exceedingly common, and the connection ought to be easily demonstrable. But this is not the case, for Landovzy and other partizans of the opinion are able to collect but some 40 cases of affections of the genital organs giving rise to hysteria—few enough as compared with the thousands of cases daily occurring. Practitioners, moreover, having much to do with the various female diseases entirely deny such connection.

ART. 131.—*Anteflexion of the Uterus considered as a normal anatomical condition.* By Dr. J. H. BENNET, Physician-Accoucheur to the Royal Free Hospital.

(*Proceedings of Royal Med. and Chir. Society*, i, No. 3, 1857.)

The author's attention was attracted some years ago, during a series of investigations into the condition of the os internum during life, by the anatomical fact that the uterine cavities and the uterus itself, in women who have never borne children, are generally more or less anteflexed. He thinks it proved that this was misunderstood, because stem-pessaries are invariably made perfectly straight, and anteflexion has been universally described as an abnormal or morbid condition. M. Huguier, however, published a memoir some years ago, describing anteflexion as an occasional congenital condition, but he described it as accidental and exceptional. The author's researches were begun with a view to determining the value of contraction of the os internum as a cause of sterility. He found that when the uterine sound met with resistance there a small wax bougie could be passed, which, if allowed to remain for a minute or two in the uterus of a woman who had borne no children, presented when withdrawn a slight anterior curve. The same effect continues in some degree after one or more parturitions. This state can scarcely be recognised by digital examination under ordinary circumstances, but is readily perceived when decided, and may become very great in exceptional cases. The author then adverted to the observations of M. Boullard on this subject, who describes anteflexion as the natural anatomical direction of the uterus. He finds it most marked in the fœtus, less so in the child, and least in the adult; and that it ceases to be perceptible in most women who have borne children. The author thought that M. Boullard had rather exaggerated the degree of curvature. He next pointed out the pathological bearing of anteflexion, believing that it might be treated as a morbid state, especially if the uterus be enlarged by chronic inflammation, which would render the curvature more marked. He thought attempts to straiten the uterus likely to be injurious, and that no treatment ought to be employed except what might be necessary to relieve the congestion of the organ. He did

not think it had any definite relation to irregular menstruation, but when both conditions were coincident the general health was much below par, and the anteflexion was commonly very decided.

ART. 132.—*On the use of the Speculum in the Diagnosis of Uterine Diseases.* By Dr. ROBERT LEE, Physician-Accoucheur to St. George's Hospital.

(*Proceedings of Royal Med. and Chir. Society*, i, No. 1, 1857.)

The author referred to the tabular statement of 220 cases of real and imaginary disease of the uterus, published in the thirty-eighth volume of the 'Medico-Chirurgical Transactions' (*v.* 'Abstract,' XI, 243), and presented in a similar tabular form the details of 80 additional cases, which had since come under his observation. Of the 300 patients, 47 were unmarried ; 1 had barely completed her eighteenth year, several were under twenty, and the majority under thirty years of age, and were suffering from hysteria, leucorrhœa, dysmenorrhœa, or some nervous affection of the uterus, without inflammation, ulceration, or any structural disease or displacement of the organ. In Case 256 the patient had been told that the womb was prolapsed and much ulcerated, and an instrument had been introduced for six weeks, with an aggravation of all the symptoms. The hymen was found so perfect on examination that it was impossible to reach the os uteri without using an unjustifiable degree of violence. On the ground of morality, and on every other ground, he could see no defence for the employment of the speculum in these 47 cases. Of the 300 patients 70 were barren, and the sterility was not removed nor the other symptoms relieved in a single instance. Several of these individuals spoke with horror and shame of the treatment to which they had submitted. A considerable number of the cases were suffering from cancerous disease, in all of which the symptoms seemed to have been aggravated by the treatment. In Case 236 the character of the disease was unmistakeable, but after an examination with the speculum a favorable prognosis had been given, and the actual cautery employed for months, and hopes of recovery held out to the last. The author expressed his conviction, that neither in the living nor in the dead body had he ever seen a case of simple ulceration from chronic inflammation of the os or cervix uteri, and to apply the term to states of the os uteri in which the mucous membrane, or, as it is termed by some, the basement membrane is not destroyed by ulceration, was an abuse of language calculated only to deceive and mislead the members of the medical profession, from whom the truth had been carefully concealed. The speculum emanates from the syphilitic wards of the hospitals at Paris, and it would have been better for the women of England had its use been confined to those institutions.

ART. 133.—*On the connection of Puerperal Fever and Erysipelas.* By Dr. J. LEVERGOOD, of Wrightsville, Pa.

(*North American Medico-Chirurgical Review*, July, 1857.)

It is not necessary to accumulate proof of the intimate connection between puerperal fever and erysipelas, but it is well to refresh the memory now and then by facts such as are here recorded and commented upon by Dr. Levergood.

"In the month of March, 1853," says this gentleman, "Dr. B. C. Lloyd, while professionally attending, in this place, for phlegmonous erysipelas, involving the entire left arm, a man whose system was very much debilitated by the excessive use of ardent spirits, was summoned to Mrs. D—, in labour with her third child. This lady lived more than a mile from town, in what is known as the 'York Valley,' renowned for its beautiful farms, fertile soil, and wealthy inhabitants, and proverbial for its healthfulness. At the time his attendance upon her began, there was no prevailing epidemic disease of any kind whatever, and Mrs. D— was enjoying perfect health. An examination showed the vertex to be the presenting part, and her labour terminated as easily and speedily as usual in such cases. On the third day, puerperal fever symptoms, one of the most prominent of which was abdominal tympanitis, developed themselves, and two days afterwards she expired.

"The second case was that of Mrs. S—. This was her sixth accouchement, and, like all the previous ones, it ended as favorably as an entirely natural labour in a female who, at the time of and previous to her confinement, was in the enjoyment of the most robust health, could be expected to end. She, also, lived in the 'Valley,' some two miles from town, and about one mile from the residence of Mrs. D—. Symptoms of puerperal fever manifested themselves on the third day subsequent to delivery, and, notwithstanding the prompt assistance of a physician from York, all efforts to save her life proved unavailing

"The third case was that of Mrs. N—, also the wife of a Valley farmer, and living fully five miles from town. This was not her first parturition, but the number of children she has had the writer is not aware of. The whole course of the labour differed in no material respect, except in its being a twin case, from those I have mentioned. She, also, was attacked by the disease, and, although, as in the previous cases, active and decided antiphlogistic treatment was promptly employed, the case had a fatal termination.

"Previous to his attendance upon the case of phlegmonous erysipelas, there had been in the charge of Dr. Lloyd, both in town and country, a number of midwifery cases, and, in no single instance, did peritonitis make its appearance; but from the time he took charge of the case mentioned, until he relinquished it, embracing a period of three weeks, he lost every parturient female, viz., the three I have mentioned, to whom he was called. The writer was engaged in obstetrical practice at the same time, some cases of which were not very remote from those of Dr. Lloyd, but in none did the disease make its

appearance. It therefore appearing very evident that the case of phlegmonous erysipelas was the source from which emanated the *materies morbi* that was proving so disastrous to the childbed women under his care, and that he was the medium through which it was disseminated, the doctor at once relinquished any further connection with the case. The writer being then solicited to take charge of the man, positively declined to do so, feeling morally certain that his patients would share the same fate as those of his friend; the service of a physician from a neighbouring village upon the opposite side of the river were secured, and from that time, no other cases of the disease appeared."

ART. 134.—*On Chlorate of Potass Injections in Leucorrhœa and Ulceration of the Os Uteri.* By Dr. BEDFORD BROWN.

(*American Quarterly Journal of Medical Science*, July, 1857.)

Dr. Brown relates four cases of leucorrhœa with ulceration of the os uteri, in which he employed injections formed by dissolving ʒj of chlorate of potass in ʒviij of rain water. The cases are not very conclusive; but it is not improbable that the injection was of some service, and will be so again.

ART. 135.—*On the local application of Carbonic Acid Gas in Irritability of the Bladder, &c.* By Dr. CHURCHILL.

(*Dublin Quarterly Journal of Medicine*, Aug., 1857.)

At a recent meeting of the College of Physicians in Ireland, Dr. Churchill read a paper in which he showed how he had employed carbonic acid gas locally, with much benefit, in irritability of the bladder, uterine irritation, hysterical vomiting, &c.; but he does not go into particulars as to the mode in which he obtained and applied the gas. One case is as follows:

This case, M.A.— I first saw in another hospital for a granular erosion and congestion of the cervix uteri, which was relieved by the usual means. I do not remember that she made prominent mention of the condition of the bladder; at all events she left the hospital, and I lost sight of her until she entered the Meath Hospital under Dr. Lees, who asked me to examine her, and by whose kindness I am allowed to bring forward these particulars. I found the cervix free from disease, and her whole complaint directed against the bladder or urethra. She said that she could only retain her water for a short time, that she suffered great pain and tenesmus immediately it was passed, whether she passed much or little at a time. The quantity was not increased, but it came away in spoonfuls, and she had constantly an uneasiness on the pubis and round the loins. The urine was acid, with considerable mucous deposit, and sometimes striæ of blood in the mucus. Her health was suffering considerably, and especially from want of sleep, for she had to pass water twelve or fourteen times during the night, and once as often as eighteen. The demand was as imperative and nearly as frequent during the night as during the day. The pulse was quiet; tongue slightly furred; appetite bad; and bowels pretty regular. Menstruation was regular. At first

we suspected it might be a case of urethritis, and the more as there was one part of the urethra somewhat painful to the touch of the catheter. But we soon saw that the bladder was prominently involved, and we tried alkaline medicine, opium by the mouth and in the form of vaginal pessaries, and in enemata, with hip-baths. Some benefit was derived from these measures, but the case was still unsatisfactory when Dr. Lees allowed me to try the carbonic acid gas to the vagina. From the first she derived more relief than from any other remedy, and its repetition was gradually followed by a subsidence of all the distressing symptoms, until she was able to leave the hospital in a state of comfort.

Some weeks after she called at my house, first, as she said, to tell me how much better she was, and to thank me, and also to apologise for having told me a lie as to the duration of the complaint, which, instead of a few months, had been of nine years' standing, and for which she had undergone a great variety of treatment Her excuse was that she thought she would have been sent out of hospital if we knew that she was such an "old customer."

ART. 136.—*Albuminuria in certain cases of Puerperal Fever.* By DR. SIMPSON, Professor of Midwifery in the University of Edinburgh.

(*Edinburgh Medical Journal*, Feb., 1857.)

In obstetric, as in medical practice, various cerebral and nervous complications have of late years been traced to the previous existence of albuminuria. Thus, many cases of convulsions, coma, amaurosis, &c., have been found to co-exist with, and depend upon those morbid states of the system which are connected with the presence of albumen in the urine. In what exact pathological relation the albuminaria stands to these various complications, it was not Dr. Simpson's present object to inquire. But he wished to point out another morbid complication with albuminuria in the puerperal state, in order that the subject may be fully investigated as occasion occurs. In the last four instances of puerperal mania which he had been called to in practice, albuminuria existed at the commencement of the attack of each; and, when we see albuminuria in the parturient female, so often lead on to convulsions and coma, we cannot be surprised at meeting with this other cerebral complication in connection with it. In one of these cases, puerperal convulsions occurred before delivery, with very marked albuminuria; and, after a short period of convalescence and absence of the albumen, acute puerperal mania set in, and the urine, on examination, again proved highly albuminous. In another of the cases, there were two sudden attacks of puerperal mania, with a week's interval between them. At the commencement of both attacks, the urine was charged with albumen, and, in the interval, was free from it. In such cases, we shall probably only find the albuminuria in a marked form, at or immediately after the commencement of the attack of mania; and the co-existence of sleeplessness, and albuminuria or its symptoms, should always put us on our guard against a maniacal attack. In the last case which he had seen, the puerperal mania lasted for two or three weeks—the albuminuria, which was at first well-marked, disappearing before the restoration of the mental powers.

Art. 137.—*On the use of Chloroform in Puerperal Insanity.* By Mr. Waters, Surgeon to the Liverpool Dispensary.

(*Journ. of Psychol. Med.*, Jan. 1857.)

There are cases in which, from the continued restlessness and obstinate refusal of the patient to take anything whatever, opium cannot be administered; and again there are other cases in which, although administered, it produces no good result, but seems rather to increase the mental excitement. In cases of this kind, the long-continued restlessness, insomnia, and absence from food, produce a state of exhaustion which, if not relieved by the introduction of nourishment into the system, and by rest, will soon terminate fatally.

In cases such as these, Mr. Waters is of opinion that chloroform will be of great value, and he adduces the following cases in corroboration of this opinion:

Case 1.—C. D. E—, æt. 24, of full habit and nervous temperament, was admitted into the Liverpool Royal Asylum as a patient.

Six weeks prior to admission, she was confined with a girl. She continued well for three weeks, and at the end of that period began to exhibit symptoms of a deranged state of mind. She had been of active habits, but had confined herself almost entirely to household duties. There had been no previous attack. Treatment had been adopted at her own home for a short time, and for three days before admission she had been put under restraint: during this period she had been very violent, and had refused food.

When admitted into the asylum, she laboured under alternate depression and excitement; there was an almost entire absorption in religious matters, and great irritability of temper. She was very restless and sleepless, and required constant watching to prevent her committing violence. She refused all food, and objected to everything intended for her comfort.

There was nothing remarkable about her physical condition. She was tall and well-made. One of the mammæ showed symptoms of incipient inflammation; the pulse was quick, and the tongue furred.

A saline aperient was ordered, and belladonna lotion to the breast.

She continued in the condition above described for four days. She refused all food, had no sleep, and was very much excited. There was, however, no heat of scalp. She was ordered effervescing draughts, with one third of a grain of morphia, every three hours; and a blister was put to the nape of the neck. On the evening of the fifth day, in consequence of her excited condition, a powerful opiate was ordered for her, but no good result was produced. On the sixth day there was no improvement; symptoms of exhaustion were coming on, and she was getting emaciated from want of food, which she still refused. She had had very little sleep, although she had taken the morphia regularly. She was put under chloroform, and an enema of beef-tea was administered whilst she was under its influence. The morphia was omitted. She slept for several hours after the exhibition of the chloroform, and when she awoke was much more quiet, and remained so for two days, during which she took her food. At the end of that time she again refused food, and had a partial return of her previous symptoms; and as these did not subside, she was again put under chloroform on the tenth day, and another enema of beef-tea was given; the same result followed as before, only to a more marked extent. She now sensibly improved, and on the

twenty-first day, eleven days after the second exhibition of the chloroform, I find the following note: "Greatly improved, eats and sleeps well, answers questions for the first time." This favorable state of affairs continued up to the forty-fourth day; on that day she became restless and excited, and chloroform was again exhibited. After that date she had no further relapse. She steadily improved, both mentally and physically, and was discharged well, after having been under treatment in the asylum nearly four months. I have lately learned that she continued well after her discharge, and has since given birth to a child, no symptoms of mania having been developed.

Case 2.—A. M. S—, æt. 26, of spare habit and nervous temperament, was admitted into the Asylum on ———.

A little more than three weeks prior to admission she gave birth to a boy—her fourth child. There was nothing remarkable about the labour, except that it was attended with some amount of hæmorrhage. All her previous confinements had been good, and she had always made a good recovery; but during the latter part of her last pregnancy, her health had been unsatisfactory. She became low-spirited and desponding, and fell into a low physical condition generally; she took no exercise, and suffered much from constipation of the bowels. She went on well after her confinement—except that she had but little milk—up to about ten days prior to admission—viz., about a fortnight after the birth of the child. Symptoms of a somewhat hysterical nature seem to have come on at that time, and she said she was going out of her mind. Three days before admission she became violent and excited in manner, and incoherent in speech. It was stated on her admission that she had had no regular sleep for ten days, and had taken but little food. Her general habits were said to be sedentary and temperate.

When admitted into the Asylum she was very restless, and could not be kept quiet for a moment. She was constantly talking in a very incoherent manner; she fancied she was subjected to shocks of electricity, and that she was beyond the hope of salvation. There was no peculiar physical conformation about her; she was thin, of moderate stature, and rather intelligent-looking; the pulse was rapid, and feeble. She was kept quiet, and constantly watched for three days; but as the symptoms did not mend, and she had had no sleep, she was put under the influence of chloroform for a short time. She slept but little after it, and on the following day was very restless. She was ordered a brisk cathartic. She was more quiet after the bowels had acted freely; but the next day the restlessness and want of sleep returned. Chloroform was again exhibited at night. It produced but little effect, and the case now began to assume a serious aspect, for the patient was getting worn out, from the fact that she took but little food, and had but little sleep. In order to prevent her sinking from want of nourishment, an enema of beef-tea was administered under chloroform. She retained the injection, and slept for the first time for an hour and a half. It was repeated on the following day under chloroform, when she slept for three hours: this was on the eleventh day after admission. She now began to take food, and to pass her motions, of a healthy character, regularly. On the twelfth day chloroform was again exhibited at night; but it produced no sleep; and, consequently, on the following night she had thirty minims of Battley's solution. She slept after taking the draught for five hours, and was much more quiet the next day. The medicine was repeated, but it produced no sleep, and the restlessness returned, and she again refused food, The enema of beef-tea was repeated under chloroform. For the next few days she remained tolerably quiet—slept for a few hours every night after chloroform, and took some

food. On the sixteenth day she had a brisk cathartic of croton oil, which seemed to be attended with benefit.

On the eighteenth day the chloroform was omitted, and tincture of henbane was tried—administered every four hours; but it produced no sleep; and forty minims of Battley were tried with the same result. On the twenty-first day she suddenly improved: she had been restless during the day, but in the evening she retired to bed of her own accord, and slept. From this day she began to improve in her physical condition; but for some time there was no marked improvement mentally. She continued under treatment for upwards of seven months, and was then discharged. At that time her general health was good, the catamenia had returned, and the mind was becoming gradually restored.

I have lately learned that the patient after her discharge perfectly recovered her mental faculties.

Case 3.—A female, æt. 28, of spare habit and nervous temperament, was admitted into the Asylum on ———.

About nine weeks before admission she gave birth to a boy. No history of the confinement could be obtained; but it was stated that for nine months previous to that event she was so ill as to be obliged to keep her bed. No account, however, was given as to what she suffered from. About a week before admission, symptoms of insanity first appeared. She became very violent at times, and threatened to throw herself from the windows of her house. She was placed under treatment, but no benefit took place. She suffered from fits of a paroxysmal character, with lucid intervals. After her admission into the Asylum she became exceedingly violent at times; she had a recurrence of fits of an epileptoid character; she was very restless, and would not answer when spoken to. She laboured under the delusion that her blood was boiling, and that she had wheels in her inside. In physical condition she was low, being much emaciated—to such an extent even, that the pulsations of the abdominal aorta could be distinctly felt on placing the hand on the surface of the abdomen.

On the second day of her admission the fits continued, and she refused to take food; she passed a quiet night. From this date up to the twenty-eighth day, there was but little improvement. On account of her restlessness and want of sleep, she was frequently put under chloroform at night, almost always with the result of giving her a quiet night. At times she refused food, and enemata of beef-tea were administered. Morphia was tried on one or two occasions to procure rest, but without effect. She required constant watching, and was kept in the padded room. She had a great tendency to injure herself, and if an opportunity were allowed her, she would knock her limbs and head against the walls, and on two or three occasions she thrust her head through panes of glass. Frequently she would refuse food for an entire day, and, on the next, eat everything placed before her. She was allowed anything she would take; but she continued up to this period much emaciated. She went on with but little alteration for two months, the chloroform being occasionally administered, and also the beef-tea enemata. She subsequently began to improve, and at the end of the seventh month she was discharged at the request of her friends, nearly well.

I have lately learned that after her discharge she perfectly recovered, and continues well.

ART. 138.—*On Abscesses of the Breast: their prevention by friction; their treatment by means of compressed sponge.* (1) By Dr. FOSTER, late Physician to the Bellevue Hospital; and (2) Dr. JOHNSON, House Surgeon to the same hospital.

(*New York Journal of Medicine*, Sept., 1857.)

1. After some general remarks upon the prophylaxis of milk-abscess, &c., Dr. Foster proceeds to speak as follows :

"No doubt the first and most important indication is to prevent the accumulation of milk in the breasts. He who succeeds in doing this has overcome the chief source of danger of abscess. With this in view, I examine the breasts carefully on the second day after delivery, and direct the nurse, in case there should be the slighest hardness, to rub them well with warm oil *until they are soft*, and to repeat the operation as often as the hardness returns. This is a very common and a very simple direction, and yet it is very rarely carried out efficiently. When it is done well, it is worth more than all other means put together to keep the breast in good order. I do not despise cathartics, and nauseants, and sudorifics, when inflammation has commenced, though even then I do not rely *chiefly* upon them to prevent the formation of matter; but I must express my disapprobation of poultices with a view to resolve the hardness; and if it were necessary, I would dispense with all other means, excepting the nursing of the child, and rely upon the rubbing alone, always provided it could be done frequently and efficiently.

"A great element of success is to commence early— *obsta principiis.* The rubber should stand behind the patient, and having lubricated the whole organ freely with oil, should use both hands, one for the friction and the other for counter-pressure, rubbing in the direction of the milk ducts, *i. e.*, from the periphery of the breast towards the nipple. If this is done with *firm pressure*, a few minutes will generally suffice to reduce the organ to a soft condition; and in case the milk has come, it will flow freely from the nipple. If the child is vigorous and takes the nipple well, there will usually be no need of pursuing this plan after two or three days. But it is desirable to keep an eye upon the organs, and in case any induration remains after nursing, to rub it away at once.

"I have intimated that it is difficult to get this well done. This is sometimes the fault of the patient, and sometimes of the nurse. The patient's breasts are very tender to the touch, and she thinks she can not bear the rubbing. But if it is done rightly, the pain will be of very short duration, and at the end of a few moments she will be able to bear any amount of pressure without suffering in the least. There seems to be a certain amount of tact requisite for this little manipulation, which many nurses never acquire. In such a case, I think it is the duty of the medical attendant to lay aside all considerations of dignity, and do it himself. But as the physician cannot be constantly in attendance, it is necessary, if after one or two trials the induration is not permanently discussed, to resort to other means.

And here we have a most invaluable resource in the compressed sponge.

"For the suggestion of this mode of treating such engorgements, I am indebted to Dr. J. P. Batchelder, of this city, who has applied this article to so many excellent uses. Its use in the treatment of open breast abscesses I believe I was the first to test, and it is a chief object of this paper to record the results of the method. The mode of preparing the sponges is very simple. A selection should be made of specimens which combine softness with elasticity, and of a size to suit the indurated portion. After freeing them from sand they should be dried, and then subjected to a heavy pressure for twenty-four hours. A common letter-copying press answers the purpose exceedingly well. They are then to be placed upon the breast and confined by a roller bandage, after which they are to be thoroughly saturated with lukewarm water. The nipple should, if possible, be left exposed, so that the child may nurse as usual. I will relate briefly the first case in which I adopted this plan. It has proved equally satisfactory in every instance in which I have employed it since.

"A lady whom I had attended in three confinements was, after the third, threatened with abscess in the breast. I directed, as usual, the frictions with warm oil, and administered, subsequently, cathartics, and nauseating doses of tartar emetic. The inflammation was thus kept in check, but the induration continued. This patient had a most faithful nurse, who rubbed the breast very perseveringly for several days, but without much effect. Satisfied that the want of success was due to the manner of the rubbing, I resolved to rub it myself, and in twenty minutes or less, the breast was completely soft. Next day, however, it was nearly as hard as ever. I now determined to apply the compressed sponge. Two days' wearing of this entirely removed the hardness, which did not again recur.

"I have pursued the same plan with the like success in engorgements occurring at a later period in lactation, where the frictions with oil had failed to subdue the hardness."

Dr. Foster then institutes a comparison between his method of treatment and M. Chassaignac's treatment *par seclusion*, and after this, he relates four cases in which his own treatment was applied successfully.

2. Dr. Johnson relates fourteen cases of mammary abscess treated with compressed sponge after Dr. Foster's method, and gives the following particulars of the method as modified by Dr. Stephen Smith, one of the surgeons of the hospital.

"The softest pieces of sponge should be selected, each being large enough to cover the entire breast. The sponge should be carefully washed to remove any gravel, shells, &c., it may contain; and, when it is thoroughly dried, it is to be compressed for a long time under a heavy weight, or between the lips of an ordinary carpenter's vice. The sponge, when thoroughly pressed, should be bound as firmly to the breast as the patient will allow, by means of a bandage passing several times around the body above and below the other breast, a piece of lint being placed between the breast and the sponge, to pre-

vent the latter from irritating. It is then soaked with cold water, and the bandage preventing the sponge from expanding outward, its expansion makes the desired pressure upon the breast. The patient usually complains of pain for ten or fifteen minutes after the first application. The temperature of the water-dressing is soon raised to that of the body, and thus we have the essential elements of a poultice —heat and moisture—without the inconvenience of an ordinary poultice. This soft, yet firm, compression adapts itself even and equally to the whole breast, and the sponge not only forces out the matter, but absorbs it; the sponges are to be kept wet during the whole time of their application. The patient soon becomes accustomed to them, and the alleviation of the suffering is so great, as to cause her to request the continuance of the treatment. The sponges should be renewed daily."

Two of Dr. Forster's cases will serve as illustrations of the rest.

Case 1.—Mrs. H. J— was confined with her first child August 1, 1855. I left town a few days after, and on my return, about the first week in September, found her with a very large abscess, involving nearly the whole breast. The patient, naturally robust, was in a state of extreme prostration. The breast was opened, in the course of the next few days, in five different places, and discharged an enormous quantity of pus. A probe could be passed its whole length, in different directions, through and under the gland. The entire organ was in a state of induration and enlargement. No milk could be got from the nipple. On September 13, a new point of inflammation having appeared on the upper part, and the skin being already bright red over a space of two inches square, I applied two sponges—one to the newly inflamed part, and the other to the lower part of the breast, covering all the incisions.

September 14.—Inflammation and hardness entirely gone in the first-named locality; the size of the breast diminished one third; the cuts healing, and the milk running freely.

Being unable to obtain a supply of the compressed sponges, I did not repeat them on the 14th; but they were re-applied on the 15th, 17th, and 18th. On this last day, the wounds had all healed, excepting one near the nipple; the milk flowed freely. Breast about one half the size of the other. Some induration in the lower third only.

19th.—Further improvement. Sponges omitted—the breast being merely suspended in a sling; patient rode and walked out.

20th.—Some soreness and induration in upper part of breast. One of the cicatrized points below looking red, I opened it with the end of a probe, and let out two or three drops of pus. From another, which was opened in the same way, a few drops of clear serum flowed. Re-applied sponges.

21st.—The fistulous opening near the nipple gave exit, after pressure upon the upper part of the breast, to about a drachm and a half of sero-sanguineous matter. The other openings firmly healed again, and the breast was everywhere softer, and free from tenderness.

From this date to the 26th the sponges were applied daily, with one exception. On the 27th, the patient left town on a visit to some friends, the general health entirely restored—the whole breast being soft; the milk flowing very freely; the fistulous opening almost healed, barely receiving the point of the probe, and yielding a single drop of serum. From the outset to the close of this case, there was no pain following the application of the sponges—the patient on the contrary, obtaining marked relief under their

use. A very slight inconvenience was felt, the first day or two, from the tightness of the bandage. The patient was allowed full diet, with wine.

A year afterward, I attended this lady in a second confinement. There was some threatening of inflammation a second time, but it disappeared after one or two rubbings, and she nursed her child on this side as well as the other.

Case 2.—Mrs. W— was confined near the last of May, 1856, with her second child. This lady had been attended in her labour by a homœopathist, and was doing well until about the tenth day (notwithstanding a very constipated state of the bowels, which, as usual, had not been interfered with), when the breast began to inflame. It was treated lightly by the attendant, who left town, and I was called in on the evening of June 6th. Although there was some evidence of suppuration, I yet hoped to avoid an incision, and on the 7th I applied the compressed sponges, and continued them until the 10th, with entire relief of the pain, and subsidence of inflammation, when, finding that it was indispensable to evacuate the matter, I ordered a poultice, and opened the abscess on the 11th, giving exit to about half a pint of pus, mixed with milk. On the 12th I applied the sponges again, and continued them daily until the 17th. On the 14th the discharge consisted almost entirely of milky serum.

16th.—Dressing omitted at night.

17th.—A soft moist sponge substituted for the compressed.

18th.—Bandages omitted. Two or three drops of serum only from the cut.

20th.—Wound perfectly cicatrized; breast free from hardness everywhere, and milk flowing freely.

In this case the sponges were only required for five days after the abscess was opened.

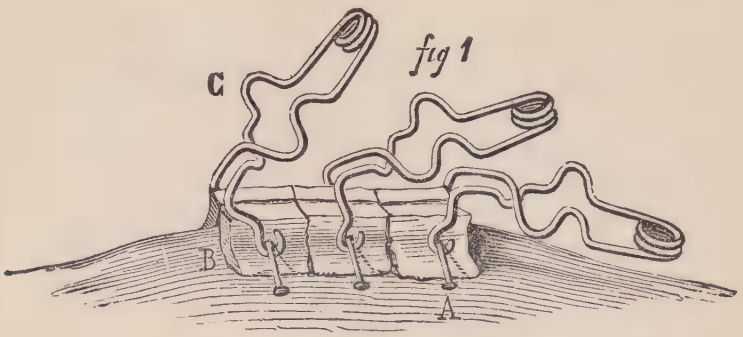
Art. 139.—*On a new mode of operating in Vesico-vaginal Fistula.* By Dr. J. B. Minturn, of New York.

(*Medical Times and Gazette*, May 30, 1857.)

In order to avoid the inconvenience arising from hæmorrhage at the time of the operation, Dr. Minturn proposes the use of the "actual cautery in cases of small and moderately-sized fistulæ, the removal of the destroyed membrane around, and the indurated portions at the orifice, when they have become loosened, the coaptation of the edges of the resulting wound as if had been made by the knife, and their retention in contact until union takes place, which I do not think would be prolonged much, if any, beyond the ordinary period required." He says further:—

"Having proposed this method and advocated it for more than a month past, I was a little surprised upon taking up the 'Medical Times and Gazette' of the 11th inst., to learn that Dr. Beck had made an application of the principle, and effected a cure upon a case under his care in the Samaritan Hospital, without the credit being given to the originator, as it has appeared to me that I am, from the result of my agitation of the subject here. That notice has determined me to send you at once this official edition of 'novel plans' for publication, that the credit of them, be it valuable or not, may be secured where it

properly belongs. Dr. Beck should have applied the serre-fines upon the pins which he used, then the case would have been complete. The closing link in the chain has been for some reason left out; can an explanation be given?*



"The next step of the operation consists in introducing pins (fig. 1, A), across the lips of the wound, entering upon the vaginal mucous membrane, two, three, or more lines from the edge of the dissection, and coming out at corresponding points upon the opposite side, free of the mucous membrane of the neighbouring organs, bladder and rectum. These pins, before their introduction, have a little square piece of cork (B) placed upon them by the side of the head. After having introduced the requisite number of pins at the distance from each other of about one third of an inch, another little square piece of cork is passed upon each of the points to oppose the one which occupies the side of the head. This done, we proceed to the application of the serre-fines of Vidal (de cassis), modified and made applicable to these operations, which M. Charrière, sen., has had made after my design (C).

"These serre-fines are of large dimension, and the branches made to form almost a right angle with the body and terminate at their extremity in a blunt hook, turned towards the body of the instrument. The branches of the serre-fines are made to embrace the lips of the wound previously approached by means of forceps, and rest upon the pieces of cork; at the same time the hooks are made to embrace the extremities of the pins, which serve to sustain them firmly in position.

"The heads of the pins are next made to approach the hooks, and the projecting points opposite are cut off to prevent their wounding the neighbouring parts. By the pressure made by the hooks and branches of the serre-fines upon the pieces of cork, we obtain a regular and nearly uniform pressure upon the whole surface

* We have published Dr. Minturn's reclamation, but can state that Dr. Beck had not only spoken of the combination of the cautery and suture for more than a month before he practised it, but that he had seen some *serre-fines* made by M. Charrière for Mr. Spencer Wells last September on a similar principle to those used by Dr. Minturn, yet he preferred the common harelip pin and twisted suture he had seen Mr. Wells apply in another case of vesico-vaginal fistula a few days before. Dr. Beck's patient was completely cured, and we do not see how the case could have been more complete.

of the wound, and consequently the conditions for union are incomparably superior to those which are offered by the simple thread suture. Another advantage this method has over the ordinary suture, will be evident as soon as mentioned. The amount of irritation and inflammation excited in the parts by the presence of the thread or tape suture often destroy the conditions necessary for union by the first intention, and endangers the life of the patient. The amount of swelling which results causes the sutures to sink deeply into the tissues, destroying the parts underneath them by strangulation, or ulcerating their way out, before the adhesive conditions can be re-established. But it will be at once perceived from the analogy of their action in other parts, that the presence of the pins does not act injuriously against their establishment, whilst the serre-fines, accommodating themselves to the conditions of the contained lips, will expand in a hyperæmic condition of the parts, and contract again as that condition subsides, sustaining a continued and even lateral pressure upon a large extent of surface, which renders unnecessary the parallel lateral incisions usually practised for the purpose of relieving tension when the simple sutures are employed, or the division of the sphincter ani muscle, as is recommended in operations for the cure of recto-vaginal fistula.

"This new suture method possesses all the advantages of the twisted and quilled sutures in an eminent degree, without their inconveniences; and more, those last are nearly inapplicable in the vagina, for it would be extremely difficult to apply them in a depth often so great, and in a space so narrow, which has led to the abandonment of the process of M. Roux. But on the contrary, one of the advantages of this means of constriction is the facility with which it can be applied and removed, either with the fingers, a dressing forceps, or a forceps *ad hoc*.

"Moreover, by the use of the pieces of cork and serre-fines, we obtain the great advantage of distributing more equally the lateral pressure than can be obtained by either the twisted or quilled sutures, and the further advantage, as before stated, of adjusting pressure, which no other suture possesses.

"After an operation in which the bladder is involved, a catheter must be introduced and worn, so that no urine may collect, which, by distending this organ, and coming in contact with the paired borders of the fistula, would prevent union. If the operation does not involve the bladder, the urine need only be drawn off at regular intervals by the means of a catheter. For the first-mentioned purpose, M. Charrière, sen., has had the following form of catheter made after my design, which may be worn with more comfort and less chance of being displaced than the ordinary instrument (see fig. 2). It is a modification of the one invented and employed by Dr. Sims.

"The instrument, as I have modified it, is composed of silver, between three and four inches in length, and curved somewhat in the form of the letter S, that its extremity may not come into contact with the wound, and by bruising it, interfere with the healing process. Its short length also prevents its making injurious pressure against any part of the wall of that viscus.

"The vesicular extremity, D, for the distance of an inch and a half, is furnished with four rows of holes, opposed to each other, of a

line or more in diameter. About an inch and a half from the last holes towards the vulvar extremity, are placed two rings, E, by which the catheter is secured in position by tapes attached to a band encircling the body. The vulvar extremity, F, is made very oblique to facilitate the dropping of the urine, and around this extremity is placed a shoulder, G, above which is tied the neck of a gum elastic bag, capable of containing about a pint and a half of fluid, and having at the opposite and depending side another neck, to which is attached a stop-cock, through which the bag may be emptied without disturbing the catheter or inconveniencing the patient. This urinary bag may be very conveniently supported by means of the suspensory bandage, through which the stop-cock is made to protrude.

"By this arrangement the following advantages are secured: The catheter need only be removed often enough to be kept free from mucous and phosphatic accumulations, and the disposition to their deposit will be much lessened by preventing the entrance of air into the bladder through the catheter by this means.

"Also, by the use of the urinary bag the disgusting odour arising from the decomposition of the urine in an open vessel is prevented, as well as the inconvenience of such vessel in the necessary position.

"Again, after the removal of the pins, it is necessary that the catheter be continued for some time, and great care exercised, lest the weak cicatrix be strained or lacerated. During this part of the treatment the urinary bag will be found especially convenient and necessary, as the patient need not then be confined to her bed.

"Upon the catheter, behind the two rings, E, may be placed very advantageously a disk of gum elastic the size of a franc, which will prevent the pressure of the rings against the soft parts of the patient, and by the thickness of this disk of gum elastic, the length of the catheter in the bladder may be graduated, this organ being always much reduced in capacity by reason of the loss of substance it has sustained, and in a contracted condition, from being empty for a longer or shorter time."

ART. 140.—*Vesico-vaginal Fistula cured in five days by a new form of operation.* By Dr. SAWYER, Master of the Coombe Lying-in Hospital, and Professor of Midwifery to the original School of Medicine, Peter Street, Dublin.

(*Lancet*, Aug. 22, 1857.)

CASE.—Fanny W—, æt. 24, remarkably small and very excitable; married fifteen months; first child; admitted into the labour ward at 3 p.m. on the 16th of May, 1856. She stated that labour had set in on the 15th, and that the waters had come away before her admission. On examination, the os was found fully dilated; head presenting; pains strong and frequent.

On the ensuing day, as she had not made progress, Dr. Kidd, the assistant, was sent for. He promptly introduced a catheter, though with considerable difficulty, owing to the pressure of the head on the pubis. Having relieved the bladder, and finding no other urgent symptoms, he directed that he should be sent for if the labour had not terminated by 10 p.m. I saw her at 11 p.m., in consultation with Dr. Jameson, and found her in a state of exhaustion, with quick, feeble pulse, irritable stomach, and the external parts tender, hot, and dry. Under these circumstances, and as the head had remained stationary upwards of nineteen hours, we decided at once to terminate the labour. I could not detect the fœtal heart; but as the placental soufflet was evident, and the pupil on duty assuring me that he had heard the fœtal tic a short time previous, I was reluctant to resort to the perforator. I succeeded with some difficulty in introducing the blades of Churchill's forceps obliquely, and, after considerable effort, extracted a large male fœtus. She made a good recovery in all points, with the exception of suffering from incontinence of urine, which set in about the fifth day after the operation. The formation of a recto-vaginal fistula was ascertained; but as her general health was impaired, she was directed to try change of air, and return to the hospital after two or three weeks' sojourn in the country.

She was re-admitted on the 1st of July, and, on examination, a transverse oval aperture was ascertained immediately above the neck of the bladder, through the vesico-vaginal septum; it measured eight lines in its long diameter, and the finger could be readily passed into the cavity of the bladder. The narrowed condition of the vagina, combined with the soreness resulting from the extensive excoriation, made the examination very difficult. The patient complained that the moment she turned in the bed, or assumed the erect posture, the urine flowed away. She said her life was miserable, that she was offensive to others, and unable to earn her subsistence, and would gladly submit to any operation. Various attempts were made to relieve the extreme sensibility of the parts. Carbonic acid gas (as suggested by Dr. Simpson) was injected, and the vapour of chloroform, through Dr. Hardy's chloroform bellows; but instead of diminishing the soreness, such aggravated suffering, with increased contraction of vagina, was induced, that I was compelled to postpone the operation from the 15th to the 25th. Two days prior to that date I cautiously dilated the vagina with plugs of prepared sponge, smeared with extract of belladonna, which proved an admirable anæsthetic.

Having previously cleared out the bowels, I secured her in the position for lithotomy, and proceeded to operate, in the presence of Drs. Montgomery, M'Clintock, Churchill, Ringland, and Mr. Maurice Collis. It had been intended to use chloroform; but after a few inspirations the sudden irregularity of the heart's action compelled us to desist. Two dilators were first introduced, and pressed obliquely upwards and outwards. The third pressing down

on the recto-vaginal septum enabled me to get a good view of the fistula. A full-sized catheter passed through the urethra, and pressed downwards and forwards, kept firm the posterior margin of the aperture, and prevented the bladder from coming in contact with the knife. With a long-handled, double-edged knife, I carefully split the vesico-vaginal septum at the posterior lip to the extent of three lines, carrying the knife completely around the commissures, and keeping close to the vesical surface. I then did the same to the lower and anterior margin, but with greater difficulty, as its aspect was turned from me. The constant welling of blood and urine compelled me to work very slowly. I then syringed with cold water, which in some degree repressed the bleeding, and with the ordinary fixed needle, as used in a similar operation by Mr. M. Collis, I inserted four ligatures of strong brown thread at intervals of three lines, carefully avoiding penetrating the vesical mucous membrane. I secured the ligatures over two bars of gutta percha, and was most cautious not to draw the thread too tight, thus preventing the risk of strangulation of the margins enclosed between the quills. The operation lasted about half an hour.

She was then placed in bed on her face, her body well supported by pillows, a long gum-elastic catheter was passed and secured, and one grain of opium was directed to be given every third hour.

On the fourth day, I examined, and was gratified to find the margins of the wound in perfect apposition, and no suppuration. I divided the ligatures, but did not remove them until the following day, that is, the fifth from the operation. The union was complete, but I did not venture to withdraw the catheter or act on the bowels until the eighth, when they were gently moved by a mixture of castor oil and tincture of rhubarb.

On the eighteenth day, she was walking about the ward. She said she was able to retain her urine, and her only inconvenience was a tendency to micturate frequently. This gradually subsided, and on the 14th of August she was discharged in perfect health, and is at present in a good situation, and, as she declared to me, as well as ever she was in all her life.

"This mode of operating," says Dr. Sawyer, "appears to me to possess the following advantages:

"1. Facility of execution.

"2. Probability of speedy union by adhesive inflammation.

"3. The prominence of the vesical flaps form an admirable barrier to the urine insinuating itself.

"4. Comparative freedom from hæmorrhage.

"5. If it does not succeed, there will be no increase of the fistulous aperture, as after other plans."

Art. 141.—*Extirpation of both Ovaries.* By Dr. Potter.

(*American Quarterly Journal of Med. Science*, Oct., 1857.)

This case is reported by Dr. Tinkham, of Geneva, New York County.

Case.—The patient was a married lady, æt. 25. She first discovered a small tumour in abdomen about two years ago; from that time to the present it has increased gradually, but within the last two months more rapidly than before. During this time her general health has been good, she has been under no medical treatment, nor has the tumour been tapped. When she consulted Dr. Potter the tumour was of immense size, distending

the walls of the abdomen from the pubis to the sternum. He decided, from its appearance and previous history, that it was an enlarged ovarium, and ordered it to be tapped. This was done on the same day, and nine pounds of a dark coloured, pasty-looking fluid drawn off. Having now ascertained beyond a doubt the character of the tumour, he recommended an immediate operation as affording the only chance for recovery. This, having been decided on by the patient and friends, was performed in the following manner by Dr. Potter, assisted by Drs. Peck, Bolton, Graves, Whitbeck, Hawley, Frost, and myself. The room was heated to a temperature of about 80°, the patient placed on a table of convenient height in the centre of the room, and chloroform administered. An incision was then made extending from the umbilicus to the symphysis pubis along the linea alba, the tissues were carefully dissected until the peritoneum was reached, some small arteries were ligated, the blood sponged away, and the peritoneum opened, when the tumour presented itself. It was slightly adherent to the omentum, but was easily separated from it by the fingers and handle of the scalpel. A trocar was introduced into the lower part of the tumour, and a large quantity of fluid nearly the colour of water drawn off. As this did not empty the tumour, it was evident there were two cavities. The trocar being introduced into the other cavity, about the same amount of fluid was evacuated as before, but of a darker colour and thicker. As the size of the tumour was still such as to prevent its being lifted from the abdomen, the incision was extended above the umbilicus about two inches; the tumour was then easily lifted out, and proved to be the right ovarium, the broad ligament of the uterus constituting its pedicle. This pedicle was cut close by the tumour, was split longitudinally into three parts, and a strong ligature applied firmly to each part. This tumour with its contents weighed twenty-two pounds. The left ovarium was then examined. It was about the size of a large hen's egg, and in a diseased condition; it was consequently removed, and a single ligature applied to its pedicle. The protruded intestines were placed back with linen cloths wet in warm water. The lips of the wound were brought together and retained by the common interrupted suture and adhesive straps. The cut extremity of the pedicle was placed as near as possible to the lowest part of the wound, and retained in place by three ligatures, which were fastened together and brought out between the lowest suture and the lower angle of the incision. A strip of lint and a thick cotton compress were laid on the wound, and the corset bandage applied—a bandage well adapted to prevent danger from action of abdominal muscles, and one which could be easily opened. The patient was left in charge of Dr. Whitbeck, attending physician, from whose report of the after-treatment I extract the following portions.

April 23d.—Four hours after operation, patient felt considerable pain in lower part of abdomen; pulse from 110 to 115. Catheter introduced, and a quantity of urine removed. Prescribed morphia $\frac{1}{4}$ gr.

24th.—Pulse 125; tongue dry; pain in abdomen. Evacuated bladder by means of catheter. Gave small doses of veratrum viride at intervals of four hours, which reduced frequency of pulse from 125 to 98, at or near which point it has remained ever since.

20th.—Patient seized with vomiting in morning. Gave a teaspoonful of brandy in a little water, and afterwards small doses of sul. morphia. Bad symptoms soon subsided. Also gave calomel, ij grains, every two hours, until ten grains were taken, followed by castor oil and an enema. A free evacuation of the bowels took place during the night.

The rest of the treatment consisted in an occasional dose of morphia and of veratrum viride. The ligatures were all removed by the 25th of May, and the patient discharged.

ART. 142.—*Report on the Enucleation Treatment of Uterine Fibrous Tumours.* By Mr. JONATHAN HUTCHINSON, Surgeon to the Metropolitan Free Hospital.

(*Medical Times and Gazette*, Aug. 1, 8, and 15, 1857.)

In this report Mr. Hutchinson brings together 39 operations, viz., 18 in which primary enucleation was completed, 6 in which primary enucleation was attempted but not completed, and 15 in which enucleation was effected by inducing gangrene. Of the 18 cases in which primary enucleation was completed, 12 recovered and 6 died; of the 6 in which primary enucleation was attempted but not completed, 4 recovered and 2 died; of the 15 in which enucleation was effected by inducing gangrene, 9 recovered and 6 died.

Primary enucleation.

Were the cases in which enucleation by gangrene has been practised by Professor Simpson added to the above table, that method would compare with still less advantage with the primary mode than it now does. But the truth is, that the cases in which it was pursued have been, as a rule, much more serious ones than those in the first list. In most the tumour was of a very large size, and either actually embedded in uterine tissue, or at any rate wholly enclosed within the cavity of the womb. Under the head of "primary enucleations," on the other hand, are included several cases in which the tumour was of small size (less than a pear), and several others in which it was already somewhat polypoid in shape, having been partially extruded by the spontaneous contractions of the organ. In these, of course, the danger to life would be but comparatively little. Of cases in which the tumour was of considerable size, intra-parietal, and not protruding either into the uterine cavity or the vagina, and in which, consequently, primary enucleation was undertaken under the most dangerous circumstances, we have 13, and of these 7 ended in recovery, and 6 in death. In the less serious class, those, viz., in which either the tumour was small in size, or already projected considerably, we have 10, out of which only 2 ended fatally, and of these 2, in 1 the tumour, although projecting into the uterine cavity, was so large that its removal had been found impracticable. It is evident, therefore, that in cases in which the two conditions of moderate size and of somewhat depending position are combined, the operation of primary removal by incisions and the use of the finger is attended by very little danger. In those in which the growth is of large size and completely embedded, the chance of recovery after its removal is about equal to the risk of death. In the largest of all, those, for instance, in which the tumour approaches the size of an adult head, no surgeon would ever dream of primary enucleation. Among the causes of death we find peritonitis and inflammation of the pelvic cellular tissue to be by far the most frequent. The hæmorrhage, with one or two exceptions, is stated to have been insignificant, and very few appear to have died directly from the shock of the operation. Although in several the operators

state that they felt themselves at the time in great risk of lacerating the peritoneal investment of the uterus where spread over the surface of the tumour, yet that accident does not seem to have ever actually occurred. In only one case is it stated that any serious hæmorrhage continued after the operation was concluded. Among the cases which recovered, in not a few the patients were very ill indeed, and had narrow escapes of death, either from peritonitis or exhaustion.

Mode of performing the operation.

Whoever has either witnessed its performance, or read the detailed accounts given in some of the French narratives, will have no difficulty in admitting that the enucleation of a large imbedded uterine tumour is an operation which calls into requisition first-rate surgical endowments. In not a few on record it occupied between two and three hours in its performance, and presented such obstacles that the operators were repeatedly on the point of relinquishing their task. The circumstance that these tumours not unfrequently occur to single women, in whom the vagina is narrow, often adds to the difficulties of a case. It is, of course, impossible to give rules which should be applicable to all; but the following memoranda are the result of much investigation, and a careful perusal of all that has been recorded, and will probably be useful to any one who may contemplate its performance for the first time.

1. To have the tumour well depressed into the pelvis by an assistant.

2. To let the first incisions be very free, and pass deeply down into the tumour, thus not only completely dividing its capsule, but facilitating its bisection, should that afterwards be found requisite. This first incision should be made with a scalpel. In most cases it will be found convenient to pass the knife into the uterine cavity, and then turning its edge on to the tumour, cut downwards, and either forwards or backwards, according as the mass may occupy either the anterior or posterior wall. All experience goes to show that no important hæmorrhage is to be feared from this incision, and, if directed in the manner indicated, the whole substance of the tumour will intervene between the knife and the peritoneum.

3. The capsule of the tumour having been opened, its separation should next be effected by means of the finger, or, if needful, by blunt-pointed curved scissors, the finger being used as a director.

4. The surgeon should be provided for this part of the operation with a set of curved scissors, of various sizes and shapes; one pair at least should be very long indeed. He should also have several pairs of strong and large vulsella, a spatula, a blunt hook, a scoop, and a pair of small midwifery forceps. In several cases the operators appear to have been baffled for want of vulsella of proper size and strength for securely holding the tumour. A strong whipcord ligature, and the various appliances for its use, should be in readiness in case of need.

5. The grand object of the operator, after having separated the tumour from its cyst-wall sufficiently to allow of its lower parts being seized, is to invert the uterus, and drag that viscus, together with the tumour, to the external parts. If this be accomplished, the

main difficulty of the operation, that, namely, of working in a confined space, is overcome, and a speedy conclusion may be effected. To do this, a large vulsellum should be carefully planted in the mass, and traction, at first gentle, afterwards vigorous, must be exerted. The axes of the pelvis must, of course, be carefully observed, and the traction must be steady, and not by jerks. As soon as practicable a second vulsellum must be placed above the first, or, if more convenient, the midwifery forceps may be employed.

6. After eversion has been accomplished, an examination with the finger in the rectum should be made, and the relative position of parts having been duly ascertained, the remaining attachments of the tumour must be cautiously separated. The utmost care must be exercised not to cut into an inverted pouch of peritoneum.

7. It is very possible, if the tumour be a large one, that it will be found convenient, before drawing it down, to cut away a portion or portions, and thus diminish its bulk.

8. It is needless to remark that throughout the utmost patience must be exercised, and as much gentleness as is consistent with the requisite degree of force.

9. The operation complete, the everted uterus must be returned; if needful, a sponge plug should be introduced, and a full dose of opium should be given.

10. The use of ice, of the ergot, and of diffusible stimuli, must be resorted to, or not, according as circumstances may require.

After-treatment.

The after-management of these cases must, of course, be conducted on general principles. The writer has, however, to speak in terms of the strongest commendation of the use of turpentine in that form of low inflammation of the pelvic organs, or peritoneum, which not unfrequently follows. It is more especially indicated if rigors have occurred, or if there be symptoms of impending pyæmia. The dose should be from twenty minims to half a drachm. Should there be abdominal tenderness, turpentine stupes may be usefully resorted to. Opium in full doses is another sheet anchor. Perhaps the symptom of restlessness will be most reliable by which to distinguish the cases most needing this drug. There would be no objection to combining its use with that of turpentine; but in cases in which the patient was sinking into helpless, profound exhaustion, and no peculiar degree of restlessness was present, the writer would prefer to rely on turpentine.

Enucleation by inducing gangrène.

This method, if we count those in which primary enucleation was attempted but could not be effected, and include also those believed to have occurred in Dr. Simpson's practice, has been performed in about 27 cases. Out of these there have been about 13 deaths, 10 recoveries, and 4 incomplete cases, in which either it was known that the whole of the tumour had not come away, or there was a return so soon as to render it highly probable that some part had been left behind. Almost all these were cases in which the tumour was of very

large size, and in several the operation was undertaken on account of immediate urgency, and after the patient had been reduced to the very lowest state by hæmorrhage. Thus it appears probable that of cases of this class somewhat more than one half may be expected to come safely through the risks incident to the procedure, and rather less than half to result in complete cures. It must be borne in mind that a large majority, indeed almost the whole, were out of all possibility of treatment by the primary method. This plan has the recommendation of being an attempt to imitate nature. Although confessedly very infrequent, yet cases have occurred in which fibrous tumours of the womb have sloughed and been extruded from their bed without the assistance of the surgeon.* A far more common event than this is for them to become pedunculated and assume the polypoid form without wholly losing their connections to the uterus. Although but few facts exist on which to ground a positive opinion, yet, judging from those which have fallen under our notice, we suspect that the fatality of the cases in which spontaneous extrusion has occurred has been little less than that of those in which it has been induced artificially. The process is one always attended with much constitutional irritation. Although no single operation is required in itself involving much risk, yet with a large sloughing mass in such an important position, with fetid discharges continuing for several weeks, the patient is kept for a considerable time in constant danger of the development of some fatal complication, in the form of pyæmia, peritonitis, or a low type of inflammation of some of the internal viscera. Repeated, if not almost daily, manipulations are needed, and the increased risk of some contagion, either of erysipelas or pyæmia, being thus conveyed by the surgeon, must not be lost sight of, especially if the patient be an hospital inmate. Then, again, it must be borne in mind that the patient has been reduced by long-continued hæmorrhages, and that in all probability her vital organs are already, to some extent, in a state of fatty degeneration, a condition which, under the evil influence of profuse suppuration, is not unlikely to become rapidly advanced to a degree incompatible with continuance of function. These kinds of risks render the operation one which will always be attended with much danger, and we think all will admit that it is one which ought never to be performed in an hospital ward. A healthy locality, and privacy in a large well-ventilated room, with the undivided attentions of a nurse, should be regarded as essential conditions. With these, and with most persevering attention to every minutiæ in the medical and dietetic management of the patient, it may, perhaps, be reasonably expected that the mortality, even in severe cases, might not exceed a third; but there are certainly no grounds for hoping for a success beyond this.

* For an interesting example of this, see Mr. Grimsdale's paper in the 'Liverpool Medico-Chirurgical Journal,' No. I. We do not know where to turn for the record of an instance of spontaneous piecemeal disintegration, such as occurs in the cases surgically treated. One such, however, happened in St. Bartholomew's a few years ago, the patient being one of the ward nurses, and its particulars have been mentioned to us in conversation by Mr. Paget. The woman recovered, but Dr. West says that subsequently another tumour protruded, as a polypus, was removed by ligature, and that death from pyæmia followed.

With regard to the plan of operating, it would appear that the knife possesses great advantages over escharotics. The object is as much as possible to separate the adhesions of the tumour from its cyst, and to thus cut off its vascular supply. Now the effect of the application of escharotics is well known to be to induce the union of subjacent parts, and of this the surgeon not unfrequently avails himself, as in the instance of abscess in the liver, requiring to be opened externally. The dread of hæmorrhage from the incisions has been proved by experience to be a chimera, and the prevention of this is, as far as we can see, the only shadow of an advantage which can be claimed for the escharotic plan. By means of a free incision the surgeon may not only divide the capsule thoroughly, but damage the tumour itself, and permit of the finger being employed at the time to accomplish the separation of the cyst-wall to as great an extent as practicable. The usefulness of ergot after a free opening has been made, and the certainty of its action in promoting the expulsion of the tumour, is a point on which all observers agree. Whether or not an attempt should be made to accomplish the enucleation of the sloughing mass by the hand within a week or two of the commencement of the treatment, or whether it should rather be left to disintegrate and come away in fragments, is a point which the circumstances of the particular case must decide. Dr. Atlee's experience seems to be that the tumour may be left to disintegrate with very good confidence (provided it have been well exposed and freely cut into) that such result will ensue; and some facts which have fallen under the writer's observation lead him to give full credence to this *à priori* improbable statement. The vitality of many uterine fibroids appears to be very small indeed, and comparatively little interference will often suffice to ensure their death, whilst the manner in which large tumours, when they have once become sloughy, will as it were melt away, is quite astonishing.

What events may be expected when fibrous tumours are not interfered with?

The determination of the feasibility of the enucleation treatment does not rest solely on an accurate estimate of the amount of risk which inevitably attends it. We must consider the other alternatives which are offered us. And here, in truth, is by far the greatest difficulty of the question. If these tumours were always fatal within a short space of time, no one would hesitate to recommend a procedure that offers a fair chance of a complete cure in a proportion of about two thirds. But we know, on the other hand, that they are of by no means infrequent occurrence, and often cause to their possessors exceedingly little inconvenience. In cases, too, in which at one period of life, and that often a protracted one, repeated and exhausting hæmorrhages have been induced, we know that not infrequently the tumour will either alter its position, diminish in size, or undergo such modification in its relations that the troublesome symptoms cease to occur, and the patient be restored to health. On this point we will quote only the confirmatory testimony of Lisfranc, which is the more valuable because it is from an ultra-partisan of the operation.

After speaking of temporary abatements of symptoms, that surgeon writes: "Il est des personnes plus heureuses: après avoir éprouvé pendant quelques années des douleurs violentes, des pesanteurs fort incommodes, des pertes très-abondantes, beaucoup de troubles dans les fonctions digestives, etc., elles voient ces phénomènes morbides se dissiper; l'embonpoint renaît et même quelquefois la fraîcheur: il existe seulement un peu de fleurs blanches, une légère pesanteur et quelques petites douleurs dans les reins; j'en soigne plusieurs qui portant des matrices énormes et fortement bosselées fournissent depuis dix ou douze ans leur carrière avec les faibles inconvénients que j'ai indiqués; elles semblent promettre de la poursuivre longtemps et peut-être même, à l'aide des moyens hygiéniques et de quelques soins thérapeutiques, comme si l'utérus était à l'état à l'état sain."—'Clin. Chir. de la Pitié,' vol. iii, p. 16.

Researches in the pathological theatres show us what these changes are, the effects of which we have noticed in the sick-room. Uterine tumours are often found contracted, and to a large extent ossified, or lodged in the outer part of the uterine parietes, or even pedunculated into the peritoneal cavity. We might also mention, under the possible events which may obviate the necessity of an operation, that spontaneous enucleation may occur; but, as we have seen above, that the risks attending this process are probably as great as when the surgeon interferes, it need not claim much attention. Thus, then, there are probably but very few cases in which the conscientious surgeon could say to his patient that the chance of recovery without an operation was hopeless. Still, however, that a number of deaths from these tumours* does occur is undoubted; and in certain cases the amount of reasonable hope is, it will generally be admitted, very small indeed. While, therefore, the indiscriminate adoption of these operations would be exceedingly unwise and wrong, yet we cannot but think that the reverse is the case under conditions of urgency. It happens very fortunately that those tumours which cause serious symptoms are usually the ones most easily accessible. The proximity of the tumour to the mucous membrane of the uterus or vagina, but especially of the uterus, appears to be the main determining cause of hæmorrhage, and just in proportion as it bulges inwards is of course its suitability for enucleation. Tumours of very large size have, on the contrary, usually risen well out of the pelvis, and the symptoms attending them are often comparatively insignificant. Two cases, which well illustrate these remarks, are at present under the treatment of the writer. In the first the tumour is apparently about the size of an infant's head, is lodged in the posterior wall of the uterus, and is wedged in the upper part of the pelvis.

The patient, a single woman, æt. 46, formerly enjoyed excellent

* An instructive and warning case of death from a fibrous tumour, which was in slow process of spontaneous extrusion, is given by Mr. Grimsdale in the paper already referred to. The tumour was found after death to have been in every way well suited for artificial removal. Many such might, doubtless, be collected. We refer to Mr. Grimsdale's paper with much pleasure, on account of the ability and candour which characterise it. Those of our readers who contemplate the performance of operations of this kind will do well to refer to it, as well as to the detailed descriptions which have been given by French surgeons.

health, and was in very comfortable circumstances, being a clever hand at the umbrella trade. The tumour has been known to exist for four years, and during that period she has been reduced to a most feeble state, and wholly incapacitated both for her occupation and for any enjoyment of life. She has now the anæmic, blanched aspect of a patient in the last stage of a malignant disease, and was indeed at one period under care at a certain special hospital, where she was told that her disease was cancer. The feet are often œdematous. The tumour can be easily felt above the pubes, but does not rise high. At present a course of the bromide of potassium is being employed, but repeatedly, during the last year, the propriety of attempting enucleation has been considered, and several consultations have been held.

The second case is that of an unmarried woman, æt. 30. The tumour is an enormous one, reaching higher than the umbilicus, and distending the abdomen as if in the last week of pregnancy. Yet here the symptoms are comparatively in abeyance. Menstruation is regular and not too profuse, and attacks of hæmorrhage occur only at intervals of several months. She is able to follow her occupation as a dressmaker regularly, and suffers very little inconvenience beyond the weight, &c., of the mass. It would, of course, under such circumstances, be madness to think of attempting any surgical treatment.

Conclusions.

We state the following as conclusions, not in any dogmatic or positive sense of the term; they are the impressions arrived at after much careful study of the subject, but further experience may very likely modify some of them:

1. That surgical interference with interstitial fibrous tumours of the uterus is always attended with very considerable risk, and ought not to be practised except under circumstances of urgency, or when the position of the growth is peculiarly tempting.

2. That when the tumour is not of very large size, and is already partially extruded, the operation is rendered comparatively devoid of danger, and ought to be performed at once.

3. When the tumour is yet wholly imbedded, and even when of large size, the enucleation treatment is yet warrantable, if the patient's life be threatened by hæmorrhage.

4. That primary enucleation, where at all easily practicable, is much preferable to the secondary method.

5. That where the tumour is very large, or where found after the incisions to be firmly united to its capsule, the secondary plan should be preferred.

6. That whichever plan it is intended to adopt, the first incision should, excepting under unusual circumstances, be made from within the cavity of the cervix, and should be as free as possible.

7. That the danger of hæmorrhage from this incision is very slight indeed.

8. That as much should be done as practicable at the first operation in the way of freeing the tumour from its cyst. Thus, if the adhesions

be found more loose than had been expected, a primary enucleation may be completed where the slower plan had been proposed.

9. That the after-treatment in cases of primary enucleation should consist in warding off the shock by opiates, in sustaining the strength, and in the free use of stimuli and nutritious diet.

10. That in cases of secondary enucleation the ergot of rye should be administered, so as to keep up vigorous uterine action, that the greatest attention should be paid to sustaining the patient's strength, and to the removal of discharge, and shreds of slough, as fast as formed.

11. That in cases of great exhaustion, and threatened pelvic inflammation, the internal use of turpentine is of great value.

12. That in cases of secondary enucleation the surgeon need not be anxious about the removal of the tumour *en masse*, but may entertain a good confidence, that if it have taken on a sloughy state in its lower part that the death and piecemeal disintegration of the whole will follow.

13. That the "recurrent fibroid" tumours slough away yet more readily after interference than the true fibrous ones, although liable to return after a short interval of health.

14. That after a successful enucleation procedure, complete, though gradual, restoration to good health may be expected.

(c) CONCERNING THE DISEASES OF CHILDREN.

ART. 143.—*On the Mortality of Infants in Foundling Institutions, and generally as influenced by the absence of breast-milk.* By Dr. ROUTH.

(*Lancet*, Oct. 24, 1857.)

After a few introductory remarks on the paucity of statistics published on this subject, as showing the experience of this country, Dr. Routh states, he is obliged to have recourse to the experience of foreign countries, more especially France. It was true that there might be error introduced by the comparison of data collected in different countries, still, as the vital statistics in most countries were governed by the same laws, the results would still be relatively true. Most writers on foundlings had attributed the mortality to want of breast-milk, whereas there were other causes of mortality far more potent. In papers of this kind, it was usual to speak of three hospitals, Paris, Lyons, and Rheims, besides Parthenay, and a place called X. Now, in Lyons and Parthenay, where the children were suckled at the breast, the mortality was respectively 33·7 and 36 per cent.; whereas in Paris, Rheims, and X, where they were brought up by hand, it was respectively 50·3, 63·9, and 80 per cent. From more extended examples in Europe, it was found the mortality of ordinary foundlings varied from 40 to 91 per cent. M. de Watteville, however, had shown that in France the mortality, where it was highest for

foundlings, varied from 50—25, a mean of 26·5; where it was least, from 0 to 5—mean, 3·6 per cent.; and for exposed foundlings, from 83 to 60 where it was highest—mean, 72·4; and where it was least, from 0 to 19·2—mean, 13·4. In other words, the mortality from 1 to 12 years was 78 per cent.; in the first year, 50 per cent.; and the mean duration of life of foundlings was 4 years. Fortunately, of late years, it was on a decrease for all France, having been 14 per cent. in 1838, and 11·30 in 1844. Dr. Routh then instanced particularly the cases of Lyons, Rheims, and Paris, showing that the arrangements in Lyons were excellent, and all the children were wet-nursed. In Rheims, besides dry-nursing, they were very badly cared for; whereas in Paris, most were also wet-nursed, but in the two latter cases the nurses were not watched sufficiently closely.

1. In comparing the mortality of such institutions, it is necessary to determine what was the actual mortality out of hospitals amongst children generally. This was mostly neglected. Here, at the outset, there was a remarkable difference between *town* and *country* residents. In Ireland, in civic districts, the mean mortality was per cent. for children under 1, 14·7 civic, 88 rural districts; for children under 5 years old, 8·1 civic, 4 rural. In England, taking towns and agricultural counties, the proportion of deaths of children under 1 and 5 to all deaths was respectively, for the former age, 23·7 and 49·8; for the latter age, 21 and 34·9. Calculating for foundlings from 1 to 12 in France, the mortality was 72·2 in towns to 11·5 in the country, showing that foundling hospitals should always be established in the country, a point seldom insisted on.

2. It is said that the mortality of foundlings was greatest in the first year, and usually 50 per cent., but also greatest in the first month of the first year. In Bordeaux, the foundling mortality was 51 per cent.; in Lyons, 37·1 per cent. in the first year; but the mortality was not stated for the first month. Still he deduced the latter from lying-in hospitals and data of accoucheurs, and he found it in both cases 6·1 per cent. In all cases of children in a general population it was so also. In Ireland, the mortality in all children aged 1 month was very high, even in the ordinary population: for all Ireland, civic districts, 31·6; rural, 22·2 per cent.; while in Leinster it was respectively 38·8 and 24·9. In England, the mean mortality of such children, compared to the number of births in the year, was—towns, 4·6; agricultural counties, 4·1 per cent. For the first year it was—Ireland, civic, 14·8; rural, 8·8 per cent. England, towns, 16·7; agricultural counties, 13·9 per cent.

3. Hospital aggregation is a prolific cause of increased mortality. In London alone, for children under 1, the mortality of the population was, from diseases peculiar to children, under 1 year, 11·1 per cent.; under 5, 22·5 per cent.; from all diseases, 16·6 per cent. in the first case, to 34·1 per cent. in the second. He attributed the mortality of children under 1 month, in Ireland, to the filthiness and poverty of Irish cabins, which he described in a quotation from the 'Quarterly Review,' No. 203, p. 78.

Thus, apart from foundling hospitals, a large share of this mortality could be accounted for.

In specifying some of the causes of mortality peculiar to foundling hospitals—

1. Effect of removal had not the injurious results ascribed to it. This was proved by statistics from France.

2. Season. Spring is most fatal to the children. All deaths being 100, those in spring would be 30·8; winter, 27·7; summer, 27·1; autumn, 14·3. Out of hospitals, in a general population, it was greatest in winter.

3. The abuse of the recumbent position of infants, and want of exercise, was then dwelt upon at length, and M. Hervieux's experience quoted to show the fatal effects of it.

4. Dr. Routh then proceeds to show that want of breast-milk, including cases of privation, cold, premature debility, atrophy, in a general population, could only account for a mortality of 3·6 per cent. per annum in 100 births. That therefore this influence was greatly exaggerated, particularly as M. Benoiston de Chateauneuf had shown that the mere substitution of a hired wet-nurse's for a mother's milk increased the mortality 10·6 per cent.

Dr. Routh concludes by giving the result of his experience, as confirmatory of these views, in two institutions to which he was attached, specially insisting on the mortality from atrophy, diphtheritis, and diarrhœa. The effect of different kinds of diet on mortality he reserves for a second paper.

Art. 144.—*On the Abdominal Typhus of Children*

By Dr. Edmund Friedrich, of Dresden.

(*New York Journal of Medicine*, July, 1857.)

The following analysis of Dr. Friedrich's work on 'Der Abdominal Typhus der Kinder' is from the pen of Dr. E. Noeggerath.

"The author," writes the reviewer, "having been for some years house-physician in the hospital for sick children of Dresden, Saxony, has made a collection of observations relating to typhus fever in children, which were taken partly from personal experience, partly from notes recorded in the day-books of the hospital. It comprises an analysis of 275 cases of typhus fever, occurring during twenty-one years, in a number of 14,868 sick children, which makes 1 out of 54, and speaks sufficiently for the importance of the disease in this age of life.

"In the historical portion of his work, the author points out the fact, that an accurate knowledge of this affection was first derived from German and French physicians, while there existed, even now, pretty incorrect notions of this disease among English authors, with the exception of Dr. Underwood.

"The following sections comprise very interesting and thoroughly elaborated articles, in regard to statistics, ætiology, symptomatology, course, complications, diagnosis, prognosis, and treatment of the disease. In all these particulars, we find the author has fulfilled everything that could be expected of a man of his diligence and skill. In

order to give the reader a correct idea of the work, we will endeavour to present a condensed statement of its contents, and the conclusions to which it leads.

"1. Abdominal typhus is by no means a rare disease among children, and is observed among them in a sporadic, as well as in an epidemical, form.

"2. It more often attacks male than female children.

"3. The number of fatally ending cases is smaller among children than among grown people; and, again, greater among female than male patients.

"4. In the very first years of life the disease is rare; becomes more frequent from the second year, and reaches its greatest extent from the sixth to the eleventh year. From that it decreases again up to the time of puberty; mortality is greatest from the first to the fourth year.

"5. Boys generally die sooner from the disease than girls, because the fever commonly has a more rapid development among the first.

"6. Abdominal typhus and scarlet fever exclude one another, so that while one of these epidemics is raging, the other disappears, or is seen only in isolated cases.

"7. Typhus epidemics have been observed in small circuits, which seized exclusively upon children, while grown persons were not taken at all, or only in some isolated instances.

"8. The pathological lesions among children are about the same as in grown persons, especially in regard to the enlargement of the spleen. But in children there is very rarely found a deposit of material in the intestinal tube, or genuine typhus ulcers. There are generally found only a few single infiltrated follicles in the glandular placques, which return to the normal condition, without even leaving a cicatrix, by a resorption of the infiltrated matter, or, more often, by rupture of the follicle opening into the intestinal tube. This rupture and discharge into the intestinal canal is generally observed only to a small extent. Moreover, the formation of ulcers in the mucous membrane of the pharynx, œsophagus, trachea, &c., is of rare occurrence among children.

"9. As decided causes of the disease, we have to consider poverty, uncleanliness, improper food, and, above all, impure air, and a damp, dark abode. Moreover, acclimatization, sudden change of the former mode of living, entrance into new conditions of life, have their influence upon the origin of the disease. Still, the most important point is the character of the epidemical constitution. Scrofula seems to be not favorable for the development of typhus fever among children.

"10. The most reliable symptoms are the tumour of the spleen, diarrhœa, meteorismus, and the abdominal gurgle. Fever, accelerated respiration, and catarrh of the bronchial tubes are equally constant symptoms. The scarce and trifling intestinal hæmorrhages at the beginning of the disease establish the fact, that the local disease is unaccompanied by a severe congestion. Seldom does the typhus

fever of children invade with chills, as is the case in grown people. Delirium and drowsiness are generally present, but not very intense. Roseola is often observed, not so much a papulous eruption, and in a later period, sometimes miliaria are seen. The extent of the exanthema does not seem to depend upon the intensity of the disease.

"11. Abdominal typhus generally appears in a milder form among children, its duration being from sixteen days to several months.

"12. Its complication with parotitis, phlebitis, and hæmorrhages, are far more seldom observed in children than in grown persons. During recovery, measles, smallpox, and other eruptions may be developed.

"13. The most common termination is recovery, which generally proceeds very fast, while tuberculosis, gangrene, intestinal ulceration, abscess, or atrophy of the mesenteric glands are of rare occurrence among children. Tubercles, if present in small quantities, seem to be liable to calcination during typhus fever.

"14. The most important points in diagnosis are the enlargement of the spleen, the roseola, the increased temperature of the skin, the diarrhœa, the meteorismus, the painfulness about the abdomen, the cœcal gurgle, the bronchial catarrh, the symptoms of cerebral disturbance, and the prevailing epidemic.

"15. The following symptoms are of the greatest importance in prognosis, which is generally favorable: the character of the epidemic, the external conditions of life, age, and sex. Complications and remaining diseases prove often more dangerous than the fever itself in its greatest intensity.

"16. Experience has taught that the expectant treatment is the best that can be pursued. It is impossible to cut short typhus fever; still, medium-sized doses of calomel, given from the fifth to the eighth day of the disease, have a decidedly good effect upon its course. Under all circumstances, we must spare the strength of the children, and let them have nutritious food in good season."

Art. 145.—*On the Insanity of Children.*

By Dr. Brierre de Boismont.

(*The Journal of Psychol. Medicine*, Oct., 1857.)

"There have recently been published in France two theses—one upon mental affections in children;* the other upon insanity at the epoch of puberty.† It seemed necessary to inquire the limit of the age of the individuals who formed the subjects of these two essays, because until then we had believed mental alienation to be very rare in childhood. Amongst the seventeen cases observed by the authors, the youngest were fourteen years of age, and the others varied from

* Paulmier. Paris, 1856. † Rousseau. Paris, 1857.

fifteen to twenty-two. The critic might reasonably object that the designation of children was scarcely applicable to the greater part of these patients. We are aware, however, that Haslam, Greding, Frank, Burrows, Spurzheim, Friedreich, Esquirol, and Guislain have related cases of insanity amongst children of less than eleven years. We owe to Dr. Marc, physician to Louis Philippe, the very curious observation of a young girl, aged eight years, who openly avowed her intention to kill her mother, father, and grandmother. Two motives seemed to influence her in this resolution—the desire to *possess their property*, and to amuse herself with little boys and men. She was morose, taciturn, and answered very laconically to any questions addressed to her. In the country she abandoned herself early to solitary vice, without her health appearing to suffer; but on her return to the town, she began to fall away rapidly. It was some time before the cause of this emaciation was discovered: on surprit enfin ses habitudes onaniques; elle less confessa cyniquement, en disant qu'elle regrettait de ne pouvoir y substituer le commerce des petits garçons.*

"In the course of a practice of more than thirty years, we have only observed three cases of mental derangement in children. The first relates to a pretty and intelligent little girl of seven years of age. Her mother was under treatment for a mental affection, and it was observed shortly that the child became irritable and capricious, and gave way to the most violent fits of passion, during which she would break and destroy everything which came to hand. Soon afterwards she became subject to attacks of ecstasy, in the course of which her features had a seraphic expression, and her eyes remained fixed upon the sky for a great length of time: she would cry aloud with a voice vibrating with emotion, 'I see the angels; they are coming to me.' When the crisis was past, she was very excitable for some time, but gradually became tranquil, and could answer rationally the questions put to her.

"The second case was that of a boy, aged six, extremely difficult to manage, and of an irritability which had become, during the past four months, insupportable. When he was placed under my care, he could not remain in one place, was continually mounting upon the chairs, tables, and window-seats, and rolling in the dust; he ate gluttonously and irregularly. He would listen to nothing, but got into a rage if any one wished to control him. He perpetually escaped from surveillance, and was never found again until he had accomplished some mischief. On account of his violence, which rendered some serious result not improbable, it was necessary to impose mechanical restraint upon him. When he found himself thus disabled, he became enraged, and menaced us in a manner most extraordinary for a child of that age: 'As soon as I am at liberty, I will set fire to the house, and if I can find a pointed knife, I will stab you to the heart; I should rejoice to see your blood flow, and to kill you.' In his father's house he had often used similar language; and it was the fear on the part of his

* Marc, 'De la Folie,' tom. i, p. 96.

parents that he would at some time carry his threats into execution, that had led them to the resolution of placing him in our institution. We found it would be dangerous to keep such a patient; he therefore returned home, and we lost sight of him.

"The third example of this kind was observed by us in the asylum of St. Athanasius, founded by the much regretted Dr. Follet. When we visited this model establishment, the directing physician, M. Baume, showed us a boy of ten years of age, who, notwithstanding a defect of the right eye, had a lively, bold, intelligent aspect; he was properly developed for that age. We were informed that he had an excellent memory, and learnt his lessons very easily. He had just made his first communion, and it was hoped that this religious act would have a favorable influence upon his shocking propensities. From his earliest years he had manifested the very worst instincts; he stole everything to which he took any fancy; he was the terror of his playfellows, whom he pinched, struck, and abused in every way; he obeyed no orders, and wandered about incessantly. His parents had never been affected with mental disturbance, and he was an only child, so that jealousy could have no share in producing these results. His instincts became more and more perverted, and as he uttered threats perpetually, would strike and try to wound, and talked continually of killing some one, his mother determined to bring him to the asylum. There he became the terror and scourge of the patients, always pinching, biting, and striking. His victims were especially the imbecile and idiots. This kind of instinct exists also amongst these classes particularly. Last year, visiting an asylum, I saw, in the section devoted to idiots, one of them, who thought he was unobserved, steal round to give a kick to one of his companions, who had in no way molested him.

"When the boy was in our presence, he seemed at first a little abashed, and spoke only in monosyllables. But speaking to him with much precaution, and attributing his misdeeds to his malady, he became more communicative, and answered our questions. He avowed quietly all that he had done; he said, 'I have no pleasure except in doing mischief. I should like to shed your blood. When I pushed against my mother, it was to throw her down.' On different occasions he manifested a desire to stab her with a knife to kill her. It is naturally, and without anger, that he does wrong. He knows well that it is wrong, but he feels no regret; he gives a blow as another child would give a piece of bread to a beggar. He spoke to us without reserve. One would have thought that the conversation was upon the most indifferent matters; the eyes had no particular expression. He retains the remembrance of what he supposes to be an injury, or of an unpremeditated wrong, and avenges it on the first opportunity. Religion has made the first attempt at cure; a prolonged moral treatment may second it. It will be interesting to know what will result from this innate tendency to evil, against which chastisement would assuredly be inefficacious, independent of its injustice; and which would certainly, to any enlightened mind, be a surety of non-responsibility in the commission of any criminal act.

"These three cases establish clearly the fact that mental derangements may occur in childhood; but they constitute rather perversions of instinct, of sentiment, and of the moral faculties, than well-defined types of mania or monomania. This tendency, moreover, is in relation with the psychological dispositions of this period of life. For ninety-nine years there have been received at the Salpêtrière and Bicêtre, in the department of epileptics, idiots, and imbeciles, young children, who, examined carefully, do not really belong to this division, but are liars and thieves; immodest and vicious in every form. M. Schnepf, in his thesis on 'Aberrations of Sentiment' (1855), has related nine cases, among which are found children of seven years and nine years and a half.

"Sundry authors, and amongst others, MM. Parchappe, Aubanel, Chore, Delasiauve, and Paulmier, have classed mania amongst those affections to which children may be liable. The cases which we have seen, characterised by great agitation, have not appeared to us to constitute true mania; and the communication made to the Medico-Psychological Society by Dr. Delasiauve refers chiefly to epileptic children, whose maniacal attacks were complicated by a kind of ecstasy. It is, however, necessary to recognise that a form of mania may exist in children. Lastly, in his 'Report of the Devon Asylum for 1856,' Dr. Bucknill, after having divided insanity, according to the symptoms, into mania and melancholy, relates, in the first category, the case of a child, twelve years of age, who was brought to the asylum for having attempted suicide by drowning and strangulation. He was affected then with chorea. Around his neck was distinctly visible the mark produced by the cord. He cried incessantly, 'I wish to die—I wish to die.' He struck his head against the wall and tried to suffocate himself by pressing his fist against his throat. He bit and struck at every one who came near him. He was put in the padded room, and had baths and medicines to procure sleep. In forty-eight hours he was quieter. Three days after, the remedies having been discontinued, the symptoms returned with all their first violence, but yielded completely to hot baths, morphia, and cold affusion to the head.

"The preceding observations leave no doubt as to the disorders of mind which may affect children. As yet the subject is new, and has not generally engaged attention; and it is easily to be understood how it happens that there is no large collection of such cases. But the subject being opened out, it is not to be doubted that shortly more extended and complete communications will furnish to education, to medicine, and to philosophy, new materials and useful data, which will rectify many errors. We may consult on this subject a very interesting essay by Dr. Bush.* The author divides the cases which he has observed into two series; 1st, those children who present excessive irritability of the nervous system, with a general lack of mental and bodily vigour; and 2d, those who, with the same lack of vigour, present diminished irritability. After examining with the

* On 'Juvenile Delinquency,' p. 57; 'Journ.,' 1849, p. 428.

greatest care the causes of the physical, mental, and moral inequality of children, he shows forth the general standard of education to which all these varieties of intelligence are subjected. He shows then that before punishing idleness, inattention, obstinacy, perversity, but especially moral derelictions, as lying, theft, &c., we should most carefully examine whether these dispositions are due to education or to the defective nature of the child. Punishment, in this case, would be only an aggravation of the evil, whilst the best corrective would be modification or change of education. No doubt the custom of considering children as mere similar units of society makes a great proportion of them entirely ignorant, where it does not morally degrade them. But how few parents would be able to have private instructors? Their assemblage in communities is the most practicable resource; but it will never be advantageous to the country at large, until the heads of colleges and similar institutions devote themselves less to the making of money, and more to the careful consideration of the faculties of their pupils, with the view of leading each in his peculiar vocation."

REPORTS

ON THE

PROGRESS OF THE MEDICAL SCIENCES.

July—December, 1857.

The intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report, to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.

I.

REPORT ON PRACTICAL MEDICINE, &c.

Note to the Lecture on Bloodletting, formerly published. By Thomas Watson, M.D., Consulting Physician to King's College Hospital. ('Edin. Med. Journal,' June, 1857.)

Reply to the previous Note of Dr. Watson. By J. Hughes Bennett, M.D., Professor of the Institutes of Medicine in the University of Edinburgh. ('Edin. Med. Journal,' June, 1857.)

The controversy which has now been going on for some time (*v.* 'Abstract,' XXV, p. 253), between Dr. Alison and Professor Bennett and others, upon the change which has taken place in the treatment of inflammation, has elicited an opinion from no less a person than Dr. Watson; and this opinion, with the rejoinder from Professor Bennett, we now propose to give without any further comment of our own. Dr. Watson, we may premise, still adheres, from conviction, to the principles which he has formerly taught. He says—

"1. Although Dr. Hughes Bennett intends his observations to have a general application, he chooses inflammation of the lungs for the main topic and illustration of his argument; and he begins by setting aside as worthless all so-called experience of that disorder, of an earlier date than the invention of auscultation. Cullen and Gregory, and writers yet older than they, were not able (he says) to recognise pneumonia in the living body, and therefore cannot be said to have had any real or certain knowledge of its behaviour under remedies.

"Now, it may be granted that neither Cullen nor Gregory could assure himself, as any student of the second year might now do, of the changes wrought by pneumonia in the living lung; but they certainly were competent to ascertain, beyond all doubt, that inflammation was going on somewhere within the chest. Against such inflammation they learned, by watching, the efficacy of early venesection. They obtained most trustworthy evidence and experience of its power to control *inflammation;* which is precisely what Dr. Bennett contests. That they might not be certain as to the exact seat of the internal inflammation, is nothing to the purpose. This part of Dr. Bennett's argument flies wide therefore of its mark.

"2. I venture to call in question the accuracy of Dr. Bennett's posi-

tions, that inflammations can never be cut short; but, whether they are to end favorably or unfavorably, must and always will run through a certain course: that is the physician's proper business to promote rather than to impede this their natural progress: that the formation of pus-corpuscles is essential to the elimination of the products of inflammation from the body. I believe, on the contrary, that inflammation may sometimes be extinguished in its very infancy, before any of its customary products have occurred; and that, even after they have some of them occurred, the intensity of acute inflammation may be abated, and its extension stayed, by the judicious use of the antiphlogistic regimen and remedies. I cannot think, as Dr. Bennett seems to think, that every step after the very first step in the inflammatory process is to be regarded as nature's mode, and the only mode, of bringing that process to a satisfactory termination.

"3. In affirming it to be impossible that bleeding from the arm can directly affect the coagulated exudations of inflammation, Dr. Bennett combats a doctrine which, so far as I am aware, has no defenders. Who treats, knowingly, the extravasated products of inflammation by general bleeding? The primary object of that measure is to anticipate, and if it may be, to prevent, such products. Still, in my judgment, it is not improbable that the abstraction of blood may sometimes promote the re-absorption of the matters exuded. Whatever may be the ultimate beneficial result (and I believe that it will be immense) of that scrutiny, chemical and microscopical, into morbid textures which modern science has achieved, the information thus obtained is not yet complete or ripe enough to warrant any exclusive reliance upon it as a guide to treatment; more especially when its teaching appears to clash with the prior teaching, for hundreds of years together, of well-conducted though empirical observation.

"4. And see what experience has really attained in this matter. Facts, which no one can gainsay, attest the immediate influence of bloodletting in incipient inflammation. The emergence from coma, or from delirium, while the blood is still flowing, in intra-cranial inflammations—the sudden relief of pain, tightness of the chest and restricted breathing in pneumonia itself, its presence being further assured by the pneumonic crackling and the pneumonic sputa—are familiar facts of that kind. Dr. Alison has testified to the unmistakeable benefit experienced by himself under the employment of the lancet in a sharp attack of pleurisy; and I have no doubt whatever that my own life was once rescued by bleeding in inflammation of the bowels; so prompt, unequivocal, and decided was the amendment which followed that remedy. Facts such as these being abundant on all sides, and undeniable, to allege that the patients were ultimately the worse for the treatment pursued—that they would have recovered sooner, or more thoroughly, had no bleeding been instituted,—is a mere begging of the question at issue, which we, of the older belief, may fairly decline to grant.

"5. That which at first sight appears to be the strongest point in Dr. Bennett's argument, is his appeal to the evidence of statistics. But the 'numerical method,' as it is called, though of excellent use in many researches, and indispensable to the acquirement of exact information of

some kinds, has no conclusiveness at all, but, on the contrary, may easily mislead, when it is applied to the *treatment* of separate cases of disease. To be guided by statistical results here, is to adopt the irrational and dangerous rule of prescribing after the *name* of a disorder; whereas each case requires its special study, speaks its proper language, furnishes its peculiar indications, and reads its own lesson. Take the very disorder considered by Dr. Bennett—take pneumonia, as certified to exist by its auscultatory signals. Surely no sane person professes to treat all instances of it in the same manner. The great majority of such cases are, by common consent, treated without venesection, and probably much as Dr. Bennett would himself treat them; some are properly treated by stimulants even; some by opium; some with mere 'expectation.' The exceeding value of statistical returns in determining the *causes* of disease has been admirably set forth by Dr. Alison; but, for directing the treatment of individual cases, it is far more profitable (as some one has well expressed it) to *watch* than to *count*. To use or to withhold a given remedy simply because it is found, by numerical calculation, that in cases nominally the same, recoveries have been more frequent when that remedy was employed on the one hand or omitted on the other, would be to sacrifice the plain and perhaps pressing indications of a particular case, to the statistical averages of diseases having merely a common denomination. To repeat what I have said elsewhere—we do not necessarily take the same symptoms as indications of treatment, which we trust to as signs of disease. We treat, indeed, not the so-called disease, but its accidents; the vital manifestations which proclaim its character and intensity, foreshow its tendencies, and illustrate its course.

"6. With respect to pneumonia, it is very true that there is much less bleeding practised now than formerly; partly, I do entirely believe, from a change in those vital manifestations to which allusion has just been made; partly because we more easily and surely estimate the extent, conditions, and progress of the inflammation. Or rather, perhaps, it should be said (setting aside what may be due to the mere fashion of the day), there is *apparently* less bleeding, because many more instances of disease are brought within the category of pneumonia, by the testimony of the ear. We grant that bleeding, like all other potent remedies, is powerful for evil as well as for good; but we advocate its prudent use, not its careless adoption, or its routine abuse. We believe that the plan which would dispense with bloodletting in all cases of acute inflammation, is too simple and facile to be the right or a safe plan.

"7. It is objected to venesection, that 'it deteriorates the blood, rendering it poorer in corpuscles and richer in water,' and therefore (presumably) less fit for the purposes of repair. But it should be remembered that the blood is liable to deterioration of a more pernicious kind by the presence and persistence of acute inflammation. Herein consists a marked difference between fevers and common inflammation occurring in a previously healthy person. In fevers, the blood is primarily diseased. In inflammation, there is reason to believe that it is the very part inflamed which gradually spreads infection

through the general mass of the blood; and this contamination we prevent or limit, if we can arrest the inflammation.

"8. After all, Dr. Bennett admits that, though large and repeated bloodlettings are opposed to a correct pathology, benefit may nevertheless accrue from a limited abstraction of blood, when there is no great debility. He even thinks it probable (speaking, however, of what he infers to have been obstruction to the circulation rather than inflammation) that the 'inexpressible relief' derived, in some cases of 'great dyspnœa and pain,' from the loss of only a few ounces of blood, may have arisen from its 'diminishing the tension of the whole vascular system.' In these admissions I apprehend that the whole matter in dispute is virtually conceded. For who shall say, in a given case of severe inflammation, what is a large, what a small bleeding? These are relative and even convertible terms. So that the Professor here appears to me to come back to the ancient ways, and the accredited practice; which is, neither to exclude bleeding, nor to bleed in excess of the present necessity. So to bleed as to secure the advantages of the remedy, and to avoid its disadvantages, is the precept, I believe, of all teachers.

"9. I have no room to discuss the question, answered in the negative by Dr. Bennett, whether febrile inflammatory diseases may change their type. He takes pains to show that the process of inflammation, in its several steps, its products, and its local effects, are at all times the same. What he has not shown is, that the human constitution is incapable, from influences to us unknown, of undergoing alterations, in respect to the manner in which it is affected by inflammation, and by the reputed remedies of inflammation. For my own part, I am firmly persuaded, by my own observation, and by the records of medicine, that there are waves of time through which the sthenic and the asthenic characters of disease prevail in succession, and that we are at present living amid one of its adynamic phases."

To these observations Professor Bennett alludes in the order in which they occur. He says—

"1. I argue against the general opinions of Cullen and Gregory, as to large bleeding in internal inflammations, not only because they were incapable of separating pneumonia from other inflammations of the chest, but because, so far as we are now capable of determining, their practice was a fatal one; because those who have imitated it, and carefully examined the results, have found it to be so (Louis, Dietl); and because all those who have abandoned it declare that not only do their cases get well as soon, but sooner, when bloodletting is not practised. Now, I can find no facts or arguments to controvert this position among the statements of my opponents.

"2. I am aware that the general *belief* is, as Dr. Watson states, that inflammation may be cut short or delayed by antiphlogistic regimen and remedies; but every well-observed fact is opposed to such a belief, and all those who have carefully studied pneumonia in reference to this point, are satisfied that bleeding lengthens rather than shortens the progress of the case. (Louis, Grisolle, the Vienna physicians.)

"3. 'Who,' says Dr. Watson, 'treats, knowingly, the extravasated products of inflammation by general bleeding?' The word 'knowingly' here is all-important, because the fact is, Cullen, Gregory, and all those

who followed them, did bleed largely after exudation had occurred. Hence very probably the large mortality, and hence the difference between the first and second series of Louis' cases. But our improved knowledge of diagnosis having taught us how to detect such exudation, we now do not bleed under circumstances where our predecessors did. This is why I contend that the change of treatment is owing to an improved diagnosis rather than to a change of type.

"The statement, that our knowledge of pathology, owing to recent chemical and microscopical investigation, is not yet complete, or ripe enough to warrant any exclusive reliance upon it as a guide to treatment, requires comment. No one has ever contended for the exclusiveness of this or any other mode of investigation. But that pathology, as a science, has of late years made rapid strides in advance, cannot be denied; and if so, why should it not do in modern times what it has done in all times past, viz., suggest to our minds the reasonableness or unreasonableness of particular modes of practice? It is in vain telling us to adhere to the routine of our forefathers, when the principles which guided them are proved to be erroneous. But when, in addition to change in theory, actual experience demonstrates that we are right—when modern pathology and modern practice harmonise with and support one another, then it appears to me that the time *has* arrived for demonstrating the errors of former teaching, as well as of past empirical observations.

"4. In this paragraph, Dr. Watson refers to the immediate relief of symptoms, produced by bloodletting, as undeniable facts. This is granted. But my argument is, that relief of symptoms is no proof that the disease is benefited. Do we influence a large thoracic aneurism, or cure it, because the symptoms it occasions are undoubtedly diminished by bloodletting? Having then, from the first, indicated the great distinction between the treatment of symptoms and the treatment of lesions, it is certainly not I who beg the question at issue.

"5. No one is more thoroughly acquainted with the fallacies inherent in medical statistics than I am, and no one has more constantly pointed these out to others. But the error of some statistics resides more in the jumbling together of different experiences, and of the cases of various practitioners, than in an endeavour thereby to arrive at the results of a particular practice in the hands of any one well-qualified observer. Surely the statistics of Louis on phthisis, and on the effects of bleeding in pneumonia, are trustworthy, as are those of Grisolle and Dietl. And I venture to affirm that my own statistics of 65 cases of pneumonia will challenge the strictest inquiry into their accuracy. Then no one, so far as I am aware, uses or withholds any given remedy merely *because* of numerical calculations, but, having seen occasion to try this or that practice, he determines its good or bad effects by counting as well as watching. Above all, he should watch and report on those who die, as well as on those who recover under a particular treatment, if he wish to ascertain its real value; and what is this but counting cases? Is such observation not better than arraying opinion against opinion, placing the vague statements of senior in opposition to those of junior practitioner, or contrasting the scholastic views of London and Edinburgh, with those of Paris and Vienna? Thus, when it is shown that of 65 cases of pneumonia which entered my clinical wards only 1 in 21⅔ died, but that, of 75 similar

cases which entered the wards of La Charité under M. Louis, 1 in 3¼ died, then I think it reasonable to conclude, that, as in my cases the vital processes were furthered and supported, whereas in those of M. Louis they were diminished or subdued, the great mortality of 1 in 3 individuals affected was owing to the treatment, and that such is a legitimate application of statistics. When, moreover, I ascertain that this conclusion is borne out by the experience of other hospital physicians, then the conviction is forced on my mind, that the number of deaths from pneumonia is lessened in modern times in consequence of our change of practice, rather than of a change of type in the disease.

"6. This paragraph still further affirms what I previously maintained, that our practice has been influenced by an advanced diagnosis. The change in vital manifestations is again asserted, but no new arguments are advanced.

"7. I agree with Dr. Watson that the essential difference between fevers and inflammations is, that in the former the blood is primarily, and in the latter it is secondarily, affected. I further agree, that, if we could arrest the inflammation, we might prevent or limit the blood disease. The possibility of doing this is the question in dispute, and the argument is in no way affected by the statements in this paragraph.

"8. I cannot agree with Dr. Watson that the whole matter in dispute is virtually conceded, because I admit that symptoms are relieved by bloodletting. A rigorous antiphlogistic treatment was formerly put in force with a view of cutting short the disease. Now, this I contend is not done; but, on the contrary, the real disorder is prolonged, and rendered proportionally more fatal by that practice. On the other hand, small bleedings which do not lower the vital strength, are sufficient to relieve urgent symptoms: it being recognised that the lesion otherwise is to be assisted in its natural progress. Surely this is a complete revolution in the principles, as well as in the practice, referable to internal inflammations. But that we should 'so bleed as to secure the advantages of the remedy, and avoid its disadvantages,' is a happy practical conclusion in which all parties must concur.

"9. I humbly think it is not for me to show that the human constitution is incapable of undergoing alterations. The *onus probandi* must be laid upon those who assert that any such change is sufficient to account for the remarkable modifications which have taken place in medical practice during the last twenty years. That there may be sthenic and asthenic waves of time, I will not venture to deny, although I may fairly assert that, as yet, we have no proofs of their existence. If the metaphor be just, I should regard the sthenic wave, which has been rolling on for 'hundreds of years together' (see Dr. Watson's third paragraph), as having been a most mischievous one, and should congratulate mankind on its being now happily broken and spent. But such would, in my opinion, be a faulty figure of speech, and in no way serve to explain the fact. On the other hand, it is incontestable that our knowledge of morbid lesions is greatly advanced, and our means of detecting them in the living body much improved. Hence, it seems to me, we are taught by diagnosis the inutility of now directly treating many diseases that formerly we hoped to benefit; and have further

learnt from pathology, that, instead of lowering, it is only by upholding the vital processes, that we can indirectly modify and overcome even textural alterations themselves."

Remarks upon some of the specimens of Diseases of the Bones, contained in the Museum of Guy's Hospital, especially those styled osteosarcoma and myeloid, with reference to the question of malignancy. By SAMUEL WILKS, M.D, Assistant-Physician to Guy's Hospital. ('Guy's Hospital Reports,' 3d series, vol. iii, 1857.)

In this paper, Dr. Wilks gives an account of some of the specimens in Guy's Hospital Museum, to which accurate histories are attached, and shows that several of the so-called innocent osteosarcomatous diseases have returned in the internal organs. He shows, indeed, and that very conclusively, that the line of demarcation between malignant and non-malignant diseases is far less defined than it is ordinarily supposed to be, and his comments upon the question of malignancy are most philosophical and practical.

"The microscope," he says, "has, we believe, ever since its general employment, tended to show that there is no more distinct line to be drawn between cancerous and non-cancerous growths than between malignant and non-malignant disease, and that there are links between the most extreme kinds of innocent and destructive growths, as between all other objects in created nature. Ordinary experience is now confirming this statement, and asking why a surgeon should call a cancerous tumour of the breast malignant, when the subject of it is in good health, and has possessed it, perhaps, for a score of years; or why tumours composed of simple fibre, cartilage, or bone, should be called otherwise than malignant when they rapidly propagate themselves through the body and destroy the life of the patient. If malignant disease be that which kills its victim by the multiplication of abnormal growths in various parts of the body, then are such as are just mentioned malignant; or if a cancerous tumour be one which ought to follow the same course, but remains stationary and local for years without detriment to the patient, then of necessity very many tumours which to the naked eye or to the microscope are undoubtedly cancerous, are not malignant."

* * * * "Should, however, the microscope at some future time detect a marked difference in a cell, a scale, or a fibre, which should denote its malignant character, we doubt if such will be done in the malignant cartilage or bone; for in all probability these substances are the result of a subsequent formation in a tumour which would have been fibrous, but from the mere accident of the growth being developed in the neighbourhood of bone, or in some organ where enchondroma is wont spontaneously to arise.

"If the elements constituting these malignant diseases be not characteristic, the malignity is due to the fact, of their simple production, from some anterior cause, in the system, which may still be called a malignant diathesis; and this, as far as we at present see, appears to consist in a tendency to the production of some elementary tissues in the full-grown body where they should not exist. Thus, the blastema which should

form the healthy supply for the nutrition of the various parts of the body produces, instead, a number of elementary cells or nuclei, and these constitute simple or malignant growths according to their degree of development and rate of production. Such a mass of cells grows and destroys the patient, by exhausting the powers or by interfering with some organ with which it is in contact. That a malignant form of disease which produces a tumour composed of cell-growths should be more common, and the tumour grow faster than one composed of fibre, is reasonable from its simpler nature; and, therefore, that such *par excellence* should be called malignant, is not remarkable; nor that if the seeds of it should be carried to any other part, that they would there also rapidly increase. If again, from some cause, whether that be in the diathesis or in the part first excited to action, the new growth should be of a fibrous character, we see with some degree of reason why it should be of slower formation than the true cancer, and why also from the fact of its approaching so nearly in structure those simple inflammatory ones which are called benignant, why this diathesis should present various degrees of malignancy in its result; and so a growth which in one instance is multiplied throughout the body, in another instance merely returns at the spot where it is extirpated. As it is extremely possible that in these two cases the malignancy is only a question of degree, there may also be only another degree between a recurrent fibroid tumour and one which never returns after removal. Again, it does not seem remarkable that a growth on the surface of the body consisting of a mass of epithelial cells, evolved from an epithelial surface, should be generally confined to that part, or remain local; for, though a cell may grow and propagate in any part, or even a fibrous structure do the same, yet an epithelial cell takes root with greater difficulty; and thus, if propagated, it is only by contact, and to the neighbouring organs, or even if seen in the viscera, as the lungs, or liver, the cells are abortive, or have only imperfect resemblance to epithelium. Malignant, osseous, or cartilaginous tumours, we believe, depend, as before said, on the same cause which gives rise to cancerous or fibrous tumour, but possess their character from being produced in the neighbourhood of bone, and retain the same if repeated throughout the system; and although this origin is not always true of cartilage, yet even this has its beginning where enchondroma is wont to arise.

"This method of regarding cancer must necessarily alter many of our older opinions respecting the disease. It has generally been regarded as a specific morbid element which, having once entered the body, dooms its victim to inevitable destruction, and this often by its mere presence in the system, and without any very great impairment of important organs. This view, however, is seen by experience to be erroneous, although the fact still remains true that the disease is as fatal as ever, and depends upon some latent idiosyncracy. Although we may very well believe that there exists a cancerous diathesis, yet that that may destroy the subject in which it is present, without any local manifestation of its presence, is without proof. There has been a kind of loose belief in this opinion, and that cancer is something foreign to the body as much as a poison; and having seized upon its victim, may possibly destroy it before any vital organ is injured by it. So much, indeed, has

this been the belief, that if a patient has had a tumour, and its nature uncertain, the aspect or wasted appearance was sufficient to decide its cancerous nature, or if another patient should seem to be wasted without any tangible cause, a latent cancer was suspected. All our individual facts, of which we have great abundance, tend to disprove this, and show that cancer kills either by the drain on the constitution, or by its encroachment on some important organ, most frequently the latter, and then the symptoms have reference to imperfection of function of that organ, rather than to the presence of the cancer. Thus, patients with cancer of the stomach, or of the parts in its neighbourhood, by which constant vomiting is set up, are subject to an extreme wasting; but such would be equally the case if such organs were affected by tubercle or simple inflammatory affection, which interferes with the chylopoietic function and the general nutrition of the body. This is proved by the marasmus of children, and the not uncommon cases in adults, where a simple inflammatory process, by involving important organs, has produced the most wretched emaciation, although diagnosis of cancer was unquestioned; and, indeed, in the so-called scirrhous pylorus, in its simplest form, the emaciation is extreme, and yet the disease in many cases is far from being proved to have a cancerous origin. On the other hand, patients who die with cancer in less vital organs, do not necessarily waste, nor if the disease attacks external parts; for in such often a superabundance of fat is found. No surgeon, indeed, looks necessarily for wasting in his cases of cancer of the breast; on the contrary, the subjects of this disease are often seen to be remarkably fat, indeed the post-mortem examination of fat patients who have died of cancer is of almost weekly occurrence."

The successful Treatment of Scarlet Fever; also observations on the Pathology and Treatment of Crowing Inspiration in Infants. By P. Hood, Surgeon. (Post 8vo, London, Churchill, 1857, pp. 200.)

Mr. Hood tells us in his preface that he has lost only two patients from scarlet fever in twenty-five years of active practice, and that his friend, Mr. Fuller, of Piccadilly, who has followed a very similar mode of treatment, has not lost a single patient from this complaint during thirty years. He tells us, further, that of the two patients lost under his own treatment, one was moribund when he was called in, and the other had been treated by a different method.

Mr. Hood has nothing new to say upon the disorder itself, and therefore we at once proceed to let him speak about a treatment which has led to such satisfactory results.

"If," he says, "the treatment adopted has for its chief object subduction of the fever, and if it be believed that fever is a thing *sui generis*, having an independent existence—irrespective altogether of that which occasions it, namely, the reception into the system of the scarlatinal poison—then is the practitioner pursuing a phantom, or fighting with a shadow, whilst he leaves the real enemy lurking untouched, or undisturbed, in the veins of the unfortunate victim. If, in the early treatment of the disease, the practitioner is induced by the great heat of skin, and

quickness of pulse, to prescribe saline, diaphoretic, and antimonial medicine for the purpose of 'lowering the fever,' he will, probably, in most cases, discover, after the lapse of a few hours, that he has succeeded in his object. But what will be the condition in which he finds, in numerous instances, his patient, when this has been accomplished? The fever may be diminished or gone—the pulse may be weak or fluttering—the rash may be paler and less vivid in colour—but greater restlessness will most probably exist. Can it be truly said that the patient is the better for these sudden changes? Certainly not:—for they are the result of the diminished power of the propulsive action of the heart, and he has taken from his patient, by the use of these depressing agents for the abatement of the fever, an amount of strength, which he, with all his efforts, will find it very difficult to restore, unless it be in a person of sound constitution, and one singularly strong. The simple disease has now been made a complicated one, in consequence of some one or other of the vital organs —the weakest, most probably, peculiar to the individual—becoming affected; and the well-meant endeavours to shorten the duration of the fever have but contributed to the prolongation of the disease. The safest treatment is that which ensures the patient freedom from a worse disease than that he is already labouring under, and which does not add to the original malady the consequences of 'nimia diligentia' in the imprudent administration of medicines intended to arrest its progress.

"From what has been already observed, it will, I think, be evident that the successful treatment of scarlet fever depends not upon one description of remedy or one mode of treatment, but upon a proper adaptation of several agents or remedies, applied in due order throughout the course of the disease; and I feel justified in saying, that if this order be adhered to, the course of the disease will be uniform, and there will be none of those severe complications which so frequently supervene towards its termination; nor will the disease be likely to assume a malignant or typhoid character, when it has been properly treated from the first. It is not to be denied that unfavourable conditions and circumstances may, occasionally, so far interrupt or change the usual course of the malady, as to prevent the strict observance of the successive order of treatment recommended. In such cases, the untoward symptoms must be combated by other agents which the knowledge and intelligence of the practitioner will enable him to supply.

"In the treatment which I have found so successful for the cure of scarlet fever, there is nothing absolutely new beyond the precision of the rules for the employment of emetics and purgatives, and the persistent use of quinine as the chief remedy. I have explained further on why I found it so difficult to render the system tolerant of this valuable febrifuge during the course of this malady. The success of the treatment is, therefore, dependent upon the adaptation, in regular order, of all that is valuable out of the many agents hitherto employed for the cure of scarlet fever by others; and I take no credit to myself beyond the discovery of the most suitable arrangement of these remedies to combat scarlet fever.

"The order of the treatment which I adopt is as follows:—1st, Emetics; 2d, Purgatives; 3d, Quinine; 4th, Opium; 5th, Wine and Diet.

"I have not, for some years, found it necessary to alter this arrangement in treating scarlet fever; nor have I made any difference in the treatment of the disease according to the variety it presented, whether it showed itself as simple scarlet fever, scarlatina anginosa, or scarlatina maligna, beyond the more liberal use of wine, and larger doses of quinine, in the last-named form. I have found that one and all are to be safely treated on the same plan, subject, of course, to those modifications as to the strength of medicine and the amount of support which particular constitutions demand; and it is with much satisfaction that I add this mite of my experience to that of the eminent men, both past and present, who have written on this formidable and often intractable disease.

"In ascertaining the effect of the different remedial agents, and in deciding on the proper time for administering them, I have had great trouble and anxiety; but I shall feel amply rewarded if the treatment which I advocate in scarlet fever be found, on trial, as successful in other hands as it has proved in my own."

And again:

"In a few instances, of adult patients, I formerly ventured to make some variation in the treatment of this disease, by administering decoction of bark with ammonia and bicarbonate of soda. When I adopted this plan, my reasons for doing so were that the heat of skin and efflorescence were very great, the tongue loaded with a brown fur, and the liver much congested, and diarrhœa not unfrequently an attendant symptom. I have, however, noticed that this alkaline treatment, although combined with the decoction and tincture of bark, has demanded a more generous employment of wine than I have ever seen required when I have adhered to my usual course of treatment in giving the sulphate of quinine with dilute sulphuric acid."

The emetic employed is to be sulphate of zinc and ipecacuanha powder, and not tartar emetic, which is too depressing; and the addition of a grain or so of cayenne pepper (after Dr. Copland's suggestion) is to be recommended. When the vomiting is over, a dose of scammony and calomel is to be given—six grains to a child six years old—and this is to be followed up, every night, except when the bowels have acted more than once on the following day, by a smaller quantity of the same preparation. And this nocturnal giving of aperients is to be continued until the tongue is perfectly clean, and the desquamation of the skin complete. The third remedy is sulphate of quinine, in conjunction with dilute sulphuric acid and compound tincture of bark, with a little syrup of orange peel (quinine, gr. jss; acid, ♏viij—x; tincture, ʒss—ʒj, for a child of six years). "As," says Mr. Hood, "I regard quinine to be the sheet-anchor of successful practice in scarlet fever, I am relieved of all anxiety as to the result of the disease, when I have once fairly established the regularity of its administration. Formerly I was in the habit of prescribing quinine, or dilute sulphuric acid, in the same order, but without paying the attention which I have since found necessary to the previous exhibition of the emetic and the purgative. Medicine of the latter kind I have, however, found to be of the greatest efficacy in preventing subsequent complications, and insuring a favorable termination of the disease. Though I never lost a patient under the

former course of treatment, I yet had often to contend against the complications that followed the subduction of the primary disease. Some of those cases were of the most severe kind; and I am now disposed to attribute much of this severity to the use of the very remedy, namely, quinine, which I now find so eminently advantageous in preventing any such description of sequelæ or complications." And again he says: "Since making this discovery, I have never had a case of scarlet fever in which the patient has not passed through the disease favorably, and without any secondary affection of a vital organ subsequently occurring." The opium is given for the purpose of abating extreme restlessness, and inducing sleep; and the proper time for giving it is after the bowels have been freely emptied, and the tongue has become perfectly clean, *not before*. Five minims of Battley's black drop in a little water sweetened with syrup of orange-peel, are given to a child of four years, and repeated every night until tranquillity is restored. The diet is to be perfectly liquid until the desquamation of the skin is complete; and, as a rule, wine is not required, except in adults. Mr. Hood does not recommend the use of nitrate of silver in any form until there is ulceration of the tonsils; and his favourite gargle is the juice of a large lemon, and a table-spoonful of honey, in a pint of thick barley-water. Mr. Hood also objects to the application of leeches to the throat, and he uses repeated hot linseed poultices for the purpose of bringing down the swelling.

Such is a sketch of his plan of treatment, but there are details for which we have no space, and which must be sought for in the book itself—a book which is well worthy of perusal.

— With regard to the crowing inspiration, we would merely say that Mr. Hood is disposed to refer this symptom to the mechanical interruption to respiration and circulation from an impeded action of the diaphragm, and pressure on the lungs, which impediment and pressure is occasioned by the unnatural size and weight of the liver; and he thinks that the spasms are more frequent and stronger, and the danger more imminent, in direct proportion to the size and weight attained by the diseased organ.

Elements of Psychological Medicine: being an Introduction to the practical study of Insanity. By DANIEL NOBLE, M.D., Visiting Physician to the Clifton Hall Retreat, Lecturer on Psychological Medicine at the Chatham Street School of Medicine, Manchester, &c. Second edition. (8vo, Churchill, 1855, pp. 356.)

The study of insanity, as presented by Dr. Noble, is stripped of much of its obscurity, by his separation of what is strictly acknowledged to be ascertained truth, from what has no foundation beyond speculation, or what has even been proved to be exaggerated and false. When he enunciates views of his own he is always careful to distinguish between what is ascertained and what is problematical; and he indulges in no speculative views, but such as are more than rationally hypothetic, when they are beyond the limits of absolute proof.

This second edition has been almost entirely re-written. The intro-

ductory chapter, after showing how much the study of insanity has been neglected, points out its importance in the demands of ordinary practice—in forensic investigations—and in attesting the fact of insanity, by fulfilling the requirements of the law in the certificates required by the commissioners, before removal to an asylum.

Dr. Noble defines insanity as an "apyrexial disorder of the brain, perverting thought or feeling, to the destruction or impairment of moral liberty." The leading facts of psychology, in their relation to physiology, and *vice-versâ*, must be well understood before psychological medicine can stand on a rational and scientific foundation. This correlation of psychology and physiology is treated of in the second chapter, which contains a concise and lucid statement of the present condition of our knowledge, from the simpler manifestations of nervous function, to the highest form of consciousness—thought.

The subject of the "emotional sensibility," and its actions upon the system, Dr. Noble treats in a very novel manner. By emotional sensibility is meant the pervading sense of bodily existence. It is sometimes confounded with, though it is distinct from, common sensation. It has no uniformity with tactile sensibility. It may render the warrior insensible to sensational impressions, as there may exist excessive pain without emotional excitement. Opium will depress common sensation, while it exalts that which is emotional. This sense is localized in the peripheral extremities of nerves throughout the entire body, but more especially those supplying the thoracic and abdominal viscera, and Dr. Noble suggests the optic thalami and corpora striata as the separate and proper ganglionic centre of the emotional sensibility. Comparative anatomy favours this opinion; and vivisection and morbid anatomy (though their evidences may not be conclusive) are likewise corroborative.

Emotional sensibility, like common sensation, has its special reactions. A pleasurable feeling is denoted by a cheerful countenance, and a light elastic step; whilst sorrow has an anxious look, a heavy tread, and measured gait.

Ascending to the highest form of consciousness, we find every idea, and every class of ideas, has its correlated sensibility. Sentiment, affection, and passion, are dependent on the effect of ideas on the emotional sensibility, and the re-action of this upon thought. Here the optic thalami and corpora striata are acted on *from above*, viz., from the hemispherical ganglia, through the agency of white fibres.

It has been generally held that the emotions entirely consist of either pleasurable or painful sensations resulting from thought or ideas. Dr. Noble's views on this point are worthy of particular notice and reference. He believes in the speciality of emotional sensibility —in its distinctness from common sensation. Thus "hot and cold, hard and soft, moist and dry, as sensations, are distinguishable conscious experiences, called forth by the qualities of objects, but in themselves subjective states, pleasurable, painful, or neutral, as the case may be." Our inward experiences are limitless, and we recognise their distinctive characters, when we are the subjects of love, fear, hatred, hope, &c. These feelings may be pleasurable, or painful, but something beyond the pleasure or the pain constitutes the emotion.

Sweetness is *sweetness,* but it is not always a pleasurable sensation—to some it may be unpleasant.

The *emotions* may be experienced to some extent, in the absence of correspondent ideas. Thus, "when a dog barks loudly, I start, from an *emotion* of fear, an experience distinctly prior to the *idea* of danger. In nervous and mental maladies, emotional states of every kind are frequently witnessed without the presence of those ideas which ordinarily produce them. Hopefulness, joy, grief, and timidity, are perpetually encountered under these circumstances. .... It is within the experience of almost every one to have felt joy, sorrow, and anxiety, as the result of a dream, the ideas connected with which have passed entirely from the mind." Though these views of Dr. Noble may have something speculative in them, they are practically useful in enabling us to form "clearer conceptions regarding many pathological as well as physiological phenomena."

What is the will? Ordinary thinking goes on without it. It can be regarded "neither as a faculty apart from other states of mind, nor as mixed up particularly with any distinct and special ganglionic structure." It is to be regarded, as well observed by Mr. Morell, "as an expression of the totality of our organic power, the whole governing the parts, and directing to the fulfilment of one purpose."

Pathology of insanity.—In all cases there is disordered action of the brain. This conclusion is not invalidated by the non-existence of sensible physical alterations discoverable after death. In other undoubted diseases of certain organs the morbid anatomist finds himself at fault. Inflammation often accompanies the invasion of insanity, but it does not constitute the malady. Insanity, however produced, exists only when the "mental aberration has established itself independently of ordinary diseases," and "it consists in a peculiar disordered action of the hemispherical and emotive ganglia, the abnormal phenomena resolving themselves into functional disturbance of these structures." In the present state of knowledge attempts to localize varieties of insanity must be sought mainly in physiology, and not in *post-mortem* lesions. We must infer particularly ganglia to the implicated according to perversion of their particular functions, and explain the corresponding derangements of the health, by the intimate sympathy subsisting amongst all collections of vesicular neurine.

Varieties of insanity.—These can only be appreciated when studied in their physical and moral relations. To arrive at real and *essential* differences is probably impossible. The basis of a classification founded on the physiology set forth in the second chapter, offers perhaps the most lucid arrangement yet proposed.

Insanity shows itself in three forms, and is divided by the author into Emotional, Notional, and Intelligential.

Emotional insanity.—The majority of cases come under this head. It is characterised by exalted, depressed, or depraved emotional sensibility, with *perverted thought* and a considerable *diminution of self-control.* It is instanced in melancholia, violent and destructive dispositions, exalted enthusiasm, &c. What have been termed clepto-

mania, pyro-mania, eroto-mania, religious madness, belong to this class. Dr. Noble believes its seat to be in the emotional sensibility caused by perverted function of the optic thalami and corpora striata, with their correlated ganglia.

This form of insanity is found accompanied by great physical endurance—there is almost an immunity from the dangers of bodily diseases, though exposed to its most perilous causes; and great unhappiness is generally experienced in some of its stages.

Dr. Noble discusses at great length these two questions: Does disordered emotion, dependent upon pathological states, of itself constitute insanity? and, Is an individual, under such circumstances, irresponsible for criminal acts? His conclusions are, that "cases of purely emotional insanity are, at least, very rare; and that perversion of the intelligence, in some form or other, should always be sought for, and anticipated when morbid sensibility causes eccentric and irregular actions." He believes impairment of moral freedom, in certain emotional states, to be distinct from insanity; and where perversion of the appetites, resulting from voluntary antecedents, leads to sin and crime, there is moral responsibility.

Notional insanity.—Characterised by a false or perverted idea, or set of ideas—morbid notions of which the mind, neither by reason nor demonstration, can be got rid. It is the madness of Ajax or Orestes. In this form erroneous ideas are more prominent than debility or disorder of the higher intellectual faculties. There are morbid perceptions and false notions, rather than defective powers of combination. Its seat is assumed to be the hemispherical ganglia. The varied forms of monomania belong to the form of notional insanity.

Intelligential insanity.—Here there is inaptness of the intelligence, exhibiting itself either in delirious evolution of thought, or in the absence of available thinking. It is characterised by defect in volitional co-ordination of thought, rather than by delusive notions. No particular notions are dominant; it is their disorderly spring, without due subordination to the will, as in the ordinary forms of mania. Where intelligence is abolished it is *dementia*. *Idiocy* is the abortion of mind. In dementia there is often a singular apathy observed; but it is remarkable how many cases exist with a "certain degree of soundness in the emotional sensibility, and also a due sequence of ideas that stand in special relation to this latter; all the actions flowing from this source having normal characteristics, the seeming result of habit maintaining itself unbroken." Intelligential insanity must be considered as having its seat in the hemispherical ganglia, and the mischief of a more diffused character than in notional insanity. Failure of mental power is often spoken of as caused by *ramollisement*, but "there is no sort of uniformity either of association or of sequence."

Diagnosis of insanity.—Under this head, the author treats of the distinction between depression of spirits or irregular excitement, and emotional insanity; distinguishes eccentric conceits from notional insanity; and also febrile delirium, arachnoid inflammation, and delirium tremens, from intelligential insanity. The distinction is also noticed between mere foolishness and semi-idiocy.

Prognosis.—The importance of studying the circumstances which determined the invasion is first treated of. Actual phenomena alone do not supply decisive indications; but these, combined with the determining circumstances, and the reactions occurring under influences of every kind, enable us to form opinions of the highest value. With regard to particular symptoms, the condition of the emotional sensibility is always of paramount consideration. The author concludes the subject of prognosis, by inserting a series of aphorisms having the high authority of Esquirol.

Etiology of insanity —In the class of predisposing causes hereditary transmission holds a prominent place. Numerous illustrative examples are cited. A vitiated state of the blood also belongs to this class; but notwithstanding the increased attention paid, of late, to humoral pathology, Dr. Noble thinks we have no information of a precise and decisive character; but he says, "when the cerebral tissue partakes of that vice which predisposes to insanity, *any* serious deterioration of that fluid upon which its functional activity depends may give effect to the predisposition;" and, again, "there is no reason for regarding such states as always concerned in its production."

Amongst exciting causes, there is a large group spoken of as "disordered sympathies." The sympathies of the stomach, of the small intestines, of a loaded colon, of worms, of depraved states of the biliary organs, of the kidneys; morbid affections of the heart and lungs, and of the reproductive organs, especially of the female sex—all these are duly considered. Such morbid sympathies existing may, however, be merely concomitant circumstances, and not exciting causes.

There are also *external physical* causes, as mechanical violence,—*coup de soleil*—heat and cold—alcoholic excesses,—the use of narcotics, as opium and tobacco—gout and erysipelas—sexual excesses—insufficiency of sleep—the puerperal state—sudden reductions of diet and withdrawal of stimulants—poor food—and a wretched sanitary condition.

The *moral* causes are domestic cares and love, in the female; and sensual excesses, business anxieties, and disappointed vanity in the male sex.

The effects of advancing civilization in the development of mental maladies are discussed, and the author concludes "that the affirmative of this proposition can hardly be maintained dogmatically." Moral contagion is also spoken of, and illustrations given.

Medical treatment.—Physical, or the more strictly medical. No greater mistake can be made than that insanity is but iittle amenable to medical treatment and more especially at the outset. It must be regulated by physical, rather than by the psychical indications, and with especial reference to the exciting cause. If it arises from external causes, as injuries, the treatment must be that of a judicious surgery. Insane patients are usually intolerant of depletion. The highest excitement may exist without so much as *irritation* of the brain in a physical sense: indeed, it very frequently occurs from exhaustion and debility. Again, the head does not always demand the chief care and

attention; the prominent indications being often determined by the state of the blood, as retained excreta from hepatic obstruction, or the presence of urea.

Insanity is often associated with anæmia or chlorosis, and these affections must be judiciously treated. The retrocession of diseases, as gout and erysipelas, cutaneous affections, and suppressed discharges induce disordered sympathies, as well as vitiate the blood, and the curative indications must be followed. The use of opium—attention to stomach and bowels, diet, and the cessation of usual stimuli are important points of practice, not only when insanity arises from physical, but also from moral causes.

Moral treatment of the insane.—This subject is treated of in the last chapter, which extends to fifty-four pages. When insanity is divested of all discoverable ailment of a physical character, the proper management is to address ourselves, primarily, to the consciousness itself. "The right treatment of uncomplicated insanity is moral." Changed functions and alterations of the organization may be effected by purely moral agencies. Medical men must not be regarded as leaving off treatment because blood-letting, counter-irritation, and drugs may cease to be employed. The following remarks on this point are forcible, and are quoted as an illustration of Dr. Noble's *style*. "It is the office of the medical adviser to guide and direct a patient at all times, and under all circumstances, in the matter of health and disease; pointing out to him when in health the way to continue so, and when sick the course whereby health may be recovered. And whatever the process which the preservation of health or the removal of sickness may involve, it is the practitioner's business to direct. This may be simply a day or two's rest in bed, or it may be a tour for recreation; a course of purgatives may be indicated, or a temporary use of bitters or of iron; an extended or more diversified social intercourse may be the requirement, or a partial withdrawal from excitement of this description; it may be the engagement of the mind in some special pursuit, encouraging hope, and exciting pleasing anticipation; or it may happen that a certain wild enthusiasm needs to be moderated. But whatever it be, if it influence health, or be likely either to provoke or alleviate disease, it comes clearly within the province of the medical man. And so long as the physician engages himself in watching his patient for the patient's own good, so long as he maintains a directing control over his course of life, he cannot be justly said to have left his patient to nature, or to have abdicated his proper functions, although for weeks he should neither prescribe a drug, nor abstract a drop of blood, nor irritate a square inch of skin."

The subject of coercion and restraint; pursuits and occupations; influence of old associations; the management of idiots; and the removal of insane patients to well regulated asylums or retreats, are considered at length, and the volume closes with a brief formula for the entire treatment of insanity.

On neglected Brain Diseases as leading to Suicide. By Forbes Winslow, M.D., D.C.L. (Journal of Psychol. Med.,' July, 1857.)

It is the purport of this paper to direct attention to the inexcusable neglect with which affections of the brain are generally treated by the public, and the lamentable amount of ignorance that unhappily exists in the non-professional mind respecting these disorders. "This neglect and ignorance," says Dr. Winslow, "is fraught with much irremediable mischief—alas! often leading to the sacrifice of valuable human life. The poor overwrought brain meets with but little attention and consideration when in a state of incipient disorder. The faintest scintillation of mischief progressing in the *lungs*, *heart*, *liver*, and *stomach* immediately awakens alarm, and medical advice and treatment are eagerly sought; but serious well-marked symptoms of brain disorder are often entirely overlooked and neglected; such affection frequently being permitted to exist for months without causing the faintest shadow of uneasiness or apprehension in the mind of the patient or his friends. Morbid alterations of temper—depression of spirits, amounting sometimes to melancholia—headache—severe giddiness—inaptitude for business—loss of memory—confusion of mind—defective power of mental concentration—the feeling of brain lassitude and fatigue—excessive *ennui*—a longing for death—a want of interest in pursuits that formerly were a source of gratification and pleasure—restlessness by day and sleeplessness by night—all obvious indications of an unhealthy state of the functions of the brain and nervous system, rarely, if ever, attract attention until the unhappy invalid, becoming unequivocally deranged, commits an overt act of insanity. Then the exclamation is, 'Poor fellow, his mind has been affected for months!' and no one expresses any surprise that he should, in such a state of mental disorder, have hung himself or cut his throat! It is difficult to induce the public to take a common sense and right view of this important subject; for if the saving of life is our object, it is to the *public* mind we must plainly address ourselves. If a person, in a previous state of mental and bodily health, is conscious that abnormal changes are taking place in the mind—that trifles worry and irritate—that the brain is evidently unfit for work—that the spirits are flagging—that all the evils of life are magnified; if he is disposed to be fanciful—imagining things to exist that have no existence apart from himself—believing that kind friends ill-use and slight him;—if symptoms like these, or analogous to these, are associated with headache, derangement of the stomach and liver, and want of continuous sleep, *the patient may assure himself that the state of the brain is abnormal, and requires careful consideration and treatment.* How often such apparently trifling symptoms of brain disorder precede the fatal act of homicide and suicide! How much may be said for those driven by unrecognised and neglected disorder of the brain and mind to acts of self-destruction!"

Then, with a view of establishing beyond the possibility of a doubt, the important fact that an enormous sacrifice of valuable life is the

result of neglected brain disease, Dr. Winslow takes the sad history of Hugh Miller, together with a number of cases of suicide—nearly seventy in all—collected from the usual channels of daily intelligence, and shows that *in all of these, there existed before the act of self-destruction, well-marked symptoms of physical ill health, and disorder of brain and nervous system.*

The importance of the facts and opinions contained in this paper are self-evident, and our only comment upon them is to express a wish that the paper may soon be found in a form which will secure as wide a circulation as possible.

Tables for the Diagnosis of Diseases of the Brain. By J. Russell Reynolds, M.D., Assistant-Physician to the Westminster Hospital, &c. (4to, London, Churchill, 1857, pp. 8.)

These tables are constructed for the use of students and others who may find some difficulty in applying their general knowledge of cerebral diseases to the diagnosis of particular cases, and they answer the end for which they were designed most admirably. They include only the more common diseases of the brain, roughly separated into four large groups. They do not attempt to describe all the features of these diseases, but simply to place in opposition to one another those which present the most striking differences. The general character of each group is stated at the commencement of each table, then the diagnosis of particular diseases is arranged in columns, and a rule is appended for the purpose of suggesting an order in the examination of symptoms. It is much to be desired that the diagnosis of other diseases was facilitated in the same manner.

On Epilepsy and Epileptiform Seizures; their causes, pathology, and treatment. By E. H. Sieveking, M.D., Physican to, and Lecturer on, Materia Medica, at St. Mary's Hospital, &c. (Post 8vo, London, Churchill, 1857, pp. 267.)

The germ of this work would appear to be contained in a paper recently read before the Royal Medical and Chirurgical Society, of which an abstract (already printed when the work before us was received) will be found in an earlier part of the present volume (p. 58), and to which we now wish to refer any one who desires to know something of the present book before obtaining it for himself. From this abstract it will appear that much stress is laid upon statistical evidence, and that no very original conclusions are arrived at. With regard to the pathology, we are obliged to be at issue with Dr. Sieveking; but upon this point we are free to allow a danger on our part of being unable to deliver a perfectly impartial judgment. At the same time, we may be allowed to cling to our own opinion until it be controverted, and assuredly it is not controverted, either directly or indirectly, in the work before us.

On Electric Chorea. By Dr. Jules Guerin. ('Gaz. Hebd. de Méd. et Ther.,' June 16, 1857.)

Dr. Dubini, physician to the large hospital at Milan, was the first to draw attention to this affection, and to call it by its name of *electric chorea*—a name which was chosen in consequence of the similarity between the convulsive shocks of the limbs and the shocks which are caused by the action of the induction coil. Dr. Dubini wrote in 1846. Shortly afterwards, cases of a similar character occurred in the same hospital at Milan, under the care of Dr. Frua and Dr. Morgante, and at Pavia under the care of Dr. Scottini and Professor Pignacca. Dr. Frua described the affection under the name of *typhus convulsivo-cerebral;* and a German physician, Dr. Hörtel, who reports two cases, gave to it the name of *myelitis convulsiva.*

Electric chorea appears to be peculiar to certain districts of Lombardy, and there to be by no means an uncommon affection. Thus, in nine years Dr. Dubini has collected thirty-eight cases, and Dr. Frua, fifty; and in six years Professor Pignacca, aided by his colleagues in the hospital at Pavia, has also collected fifty cases. Dr. Jules Guerin obtains his information on the subject partly from an article in the Turin 'Giornale delle Scienze Mediche' (December 31st, 1856), and partly from a report which has recently been presented to the Medical and Chirurgical Academy of Turin, by Dr. Girola.

Electric chorea may be either acute or chronic, and in either case its termination is almost universally fatal.

Its peculiar characters are—1. Certain choric convulsive shocks in the limbs, occurring rhythmically, persisting with scarcely any intermission for hours, days, or even weeks, and followed by a paralytic condition of the convulsed muscles, and by an atrophied condition also, if life is prolonged sufficiently. 2. Certain tonic convulsions of great violence, affecting the muscles in which the chronic convulsions are seated, and occurring in paroxysms, sometimes as frequent as thrice in one day. 3. Epileptiform attacks, sometimes general, sometimes partial. 4. Certain cerebral symptoms, such as cephalalgia, delirium, and coma. The predominance of one or other of these symptoms in certain cases, leads Dr. Girola to define three principal forms of the malady—electric chorea, epileptic chorea, and cephalo-electric chorea. Electric chorea, as a rule, begins quietly, and is in no great haste to assume its serious characters. As a rule, also, a delirium lasting for some days, and ending in coma, ushers in the fatal termination. In the epileptic form the paroxysms become more and more frequent, and in one of these the patient often dies asphyxiated. In cephalo-electric chorea the choreic symptoms supervene upon symptoms of meningitis, and the whole course of the disease, from its commencement to the fatal termination, is from nine to thirteen days.

With few exceptions, the attack is ushered in by the convulsive

shocks, without any obvious warnings. These shocks affect particularly the limbs on the left side, and the flexors rather than the extensors. Thirty, sixty, one hundred of these shocks, may occur in one minute, occurring in a certain order or rhythm, and accompanied by feeling of pain, tingling, or cramp, in the same parts. Headache, vertigo, humming and ringing sounds within the ears, for the most part accompany these shocks. Eventually, delirium, somnolence, coma, show how much the intelligence suffers under these attacks. Eventually, paralysis or muscular atrophy, sometimes complete abolition of the muscular irritability, show how much the motor system suffers under the same trouble. At first, the digestive functions are but little affected, but after a time the appetite fails, and gastralgia and frequent vomiting may add to the distress. Generally, also, there is no fever; but when the convulsive attacks are unusually violent, the skin may become hot and burning, and the pulse may rise to 100 in the minute, or higher still.

The mean duration of the affection would seem to be from forty to seventy days, if we except a few in which death happened in a few days from urgent cerebral symptoms.

The prognosis is extremely dark, death being the rule and recovery the exception. According to Dr. Dubini, the deaths were 36 in 38; according to Dr. Frua, 39 in 50; according to Professor Pignacca, 7 in 9.

Examination after death reveals no constant lesion. More or less marked congestion of the cerebral and spinal membranes was the most constant sign; sometimes evident thickening of these membranes; sometimes a degree of softening or induration in different parts of the cerebro-spinal centres. The glands of Peyer were often enlarged to a considerable extent, and worms were never absent from the intestinal canal.

The etiology of this affection is wrapped in profoundest obscurity. Persons living in the country, and males from eleven to twenty years of age, have been almost exclusively attacked; and the season of attack has been winter rather than the warm seasons of the year. Fear, habits of drunkenness, worms, are mentioned as causes.

Bleedings, cold to the head, strychnine, mercurial inunction, cauterization along the spine, vermifuge purgatives, atrophine, blisters, have all been tried, but in vain, if we may judge from the results before specified.

With respect to the pathology of this sad disorder, the only light would seem to be furnished by a remark of Dr. Girola, which is to the effect that electric chorea is developed under circumstances similar to those in which pellagra originates, and that there may be some analogy, so far as the causes are concerned, between electric chorea and raphania or ergotism of the convulsive kind.

Case of Paraplegia from Obstruction of the Abdominal Aorta. By William Gull, M.D., Assistant Physician to, and Lecturer on, Medicine at Guy's Hospital. (Guy's Hospital Reports, Third Series, vol. iii, 1857.)

The nature of the obstruction in this remarkable case is only matter of conjecture; but, whatever it may have been, it obviously dates, as proved by the development of the arterial anastomosis since that time, from the occurrence of the paraplegia.

Case.—J. B—, æt. 34, employed as a shipwright in the dockyard at Woolwich. Habits temperate. Accustomed to take part in carrying heavy loads; and being over six feet in height, the greatest share of the weight often falls to his share. At the beginning of March, 1855, being then, as he supposed, in good health, he was suddenly seized, whilst at work in a stooping posture, with pain round the loins. This went off after he had rested a few minutes. With the pain he had a desire to go to stool, but without effect. As he resumed his work, the pain returned, and extended down the legs, with a sense of numbness, soon followed by entire paralysis both of sensation and motion, from the loins downwards. The sphincters were paralysed. After a few days, sensation returned, and he was able to take a few steps unsupported. He gradually improved, but the gait remained unsteady, and the use of the legs soon brought on increased weakness and numbness. For these paraplegic symptoms he was admitted under my care into Guy's Hospital, in June of the same year. On examining the spine, no tenderness nor irregularity could be detected; but on auscultation, a soft, bellows-murmur was audible down the back, but most distinctly at the lower angle of the scapula, on the left side. There was no pain or tenderness at the part, nor any pain in the course of the intercostal nerves. Percussion elicited slight dulness where the murmur was most audible. Anteriorly, under the ensiform cartilage and lower third of the sternum, there was a prolonged bellows-murmur, not heard so distinctly upwards in the course of the aorta, or towards the left axilla. There was no pulsation in the abdominal aorta, nor in the arteries of the lower extremities. The legs were cold, the muscles wasted; no œdema nor any venous turgescence in them. The superior epigastric artery, on the right side, was enlarged, and could be indistinctly seen pulsating for two inches of its length, the blood running from above downwards. From that date until the present time (August, 1857) the case has remained under notice. The superficial arteries of the back and abdomen have gradually enlarged. At the posterior boundary of the axilla, on either side, the small arteries are so numerous as to form a soft pulsating mass, reminding one of the rich arterial plexuses in the intercostal spaces of the cetacea. The enlarged arteries on the back emerge at the fourth and fifth intercostal spaces, and dip again at the ninth. The anastomosis is much more extensive on the back and sides of the trunk than on the abdominal walls. From time to time he has slight returns of weakness and numbness in the legs. No pulsation is yet discoverable in the aorta or femoral arteries, nor in any of their branches. The systolic murmur at the lower third of the sternum remains. The chief part of the murmur now heard in the back, is apparently referable to the rush of blood along the numerous subcutaneous channels of anastomosis. The patient has regained power to walk tolerably well, but his muscles are thin and his gait languid. Feet cold and damp.

His general health is good, and he is able to do the lighter parts of his work. The pulsation of the arteries of the upper extremities is full and throbbing, and the heart's impulse increased. There is no sign of venous obstruction.

The Phenomena of Spinal Irritation, and other functional diseases of the nervous system, explained, and a rational plan of treatment deduced. By THOMAS INMAN, M.D, Physician to the Northern Hospital, Liverpool, and Lecturer on Medicine at the Royal Infirmary School of Medicine. (8vo, Churchill, 1857, pp. 201.)

What Dr. Inman proposes to show in this volume is—

1. That the symptoms attributable to "spinal irritation" have nothing to do with the spinal cord, or the nerves arising from it.

2. That the majority, if not the whole of them, are due essentially to the same cause which produces the spinal tenderness.

3. That the spinal tenderness results from overstraining of the fibrous origins of the muscles attached to the spinous processes.

4. That the spinal tenderness is analogous to that experienced at the origin and insertion of muscles in other parts.

5. That the weaker the individual is, the greater is the tendency to fibrous pain.

6. That the most common causes of the pain and tenderness, in any part of the muscles, are constitutional or acquired debility.

7. That debility increases equally the irritability of the muscular and the nervous systems.

8. That before hysteria can manifest its presence there must be debility from some cause or other:

9. That debility may show itself in the muscular or nervous system, or both.

10. That debility affects the nervous system as a whole or in sections —*i. e.*, mental, sensitive, motor, organic.

11. That functional affections in any one or more of these parts have long been recognised as emanating from deficient vital power.

12. That anything which deteriorates the vital power has a direct tendency to aggravate the complaints referred to.

13. That muscular and nervous irritability are subject to the same laws, and that the remarks applicable to the one are, *mutatis mutandis*, applicable to the other.

14. That the link connecting hysteria with spinal disorders is constitutional or acquired debility.

15. That, as regards curious mental phenomena, excess of sensibility in the nerves of common or special sensation, a propensity to spasmodic actions and to irregular organic phenomena, there is no essential distinction, they are simply different facets of the same die.

16. That the essential distinction between genuine hysterical and muscular affections is, that a large amount of bodily rest is necessary for the cure of the latter, while it is not so absolutely requisite for the former.

17. That, for the future, it will be necessary to discriminate between pain arising from muscular fatigue, cramp, or fibrous stretching and

genuine neuralgia, and that there will be neither precision in diction nor a clear idea of treatment until the distinction is made.

These are the principal propositions which are set forth in the work before us, and to the establishment of which Dr. Inman adduces evidence which must be allowed by every one whose prejudices will not interfere with the fair exercise of his reasoning powers. At any rate the evidence appears to be sufficiently cogent to us.

The rules of treatment which arise out of these considerations are those upon which we have acted for years, and often insisted upon in clinical and other modes of teaching. Indeed, there are many now who will fully sympathise with remarks such as these: "When, says Dr. Inman, "the profession shall begin to look with jealousy at every dose of calomel, antimony, or digitalis that they order—when they take for a starting-point the axiom that 'disease implies debility,' and 'that everything which weakens a patient must impede his restoration to health'—when bleeding shall have been dismissed to the limbo of scientific fallacies, to be recalled only by some medical judge of supreme knowledge—when blisters become the rifle-shot of the experienced hunter, who never fires without a definite aim, rather than the grape, canister, or the shrapnel-shot of the artillerist, who fires them comparatively at random—when purgatives are not considered panaceas, and salivation is not a refuge for the destitute of ideas—when active treatment gives way to scientific, and the general health is considered superior to the apparent health of any one organ—when medicines are considered as means to an end, and not as so many doses of bottled comfort—when the doctor recognises in recovery the result of a natural process rather than the imbibition of so many ounces of physic—when there is a thorough knowledge of what medicine can do, as well as what it cannot—when a discrimination is made between the effects of a disease and the effect of presumed remedies—when the natural history of each complaint becomes more generally known,—not only will the science of medicine be fixed upon a firm basis, but it will command a confidence that it has never yet fully deserved.

"Heresies may be possible, but they never will be captivating.

"At present the tendency of medical authors is to hold a magnifying-glass before particular organs, to discriminate between the minutest phases of their complaints, and to discuss the best plans for the relief of this or that symptom. What is wanted is a broad and comprehensive classification, in which life, health, vitality, and nutrition will form the genera, and diseases the species only.

"The question that the physician will then propose to himself will be, how shall I restore the patient to health? not, how shall I attack the complaint? When an organ has gone wrong, or an inflammation has set itself up, instead of punishing the former, and knocking down the latter, the system will be helped to put the one right and to get over the other. A difficulty will be 'tided over,' instead of being crushed; rapidity of cure, rather than an ultimate result will be the test of successful theory, and oh! conclusion most disastrous, the more scientific the physician the smaller will be his emoluments!"

On Hypertrophy of the left Ventricle of the Heart in relation to disease of the Aorta and its branches. By W. S. KIRKES, M.D., Assistant-Physician to St. Bartholomew's Hospital. ('Medical Times and Gazette,' August 1 and 8, 1857.)

Dr. Kirkes' object in the present paper is to show that many examples of extensive disease of the aorta have originated in, and are dependent upon, prolonged overstraining of their walls produced by an hypertrophied left ventricle, especially by such hypertrophy as ensues in advanced renal disease, and is independent of valvular obstruction. His object, indeed, is to support a view, originating, as he tells us, with Professor Dietrich, of Erlangen, but little known in this country.

It is no doubt more than difficult to understand how an hypertrophied ventricle, instead of being the cause, is the consequence of the arterial mischief—how disease of the arterial coats can excite hypertrophy of the left ventricle.

"It is said," says our author, "to do so by weakening the elasticity of the coats, but it is not explained how such weakened elasticity can induce hypertrophy. What is the chief purpose of the elastic coat, beyond the additional strength and power of resistance it gives to the walls? Clearly it is that of breaking the shock which the column of blood in the arterial system would be subjected to at each ventricular contraction, if it were within tubes formed of unyielding walls. In health, when the coats of the aorta are duly elastic, part of the force of the ventricular contraction is primarily expended in distending the arteries; the other part is at once employed in moving on the mass of blood. On the cessation of the ventricular contraction, the stretched arteries recover their former state, and then all the force which had been engaged in distending them—but no more than that force—is restored to the service of the onward current; in other words, this portion has only been held in reserve for the double purpose of lessening the impulsive shock which the column of blood would have otherwise received at each contraction of the ventricle, and of equalizing the arterial current by converting the successive interrupted accelerations of the stream into a continuous onward movement. No additional force, it should be remembered, is given out by the larger arteries, they have no contractile power, or next to none, by which they could of themselves accelerate the arterial stream; all they have is acquired from the ventricular contraction, and this they simply restore when the ventricular contraction ceases. This absence of active self-generating power in the elastic tissues of the aorta renders it difficult to understand why, when the coats are diseased and their elasticity impaired or lost in consequence, the left ventricle should necessarily become hypertrophied. There is no additional impediment offered to the arterial circulation by the coats of the arteries being inelastic. The mere deficiency of elasticity, therefore, does not entail upon the ventricle any greater employment of force to move the column of arterial blood. All that will result from such imperfect elasticity of the walls will be, that much less of the force which in health has to distend the arteries will be

required for that purpose, this hitherto reserved force now being employed directly in moving on the mass of blood. The effect no doubt is most injurious; for, deprived of the equalizing power of properly elastic arteries, the blood is sent along with unbroken shocks, to the great detriment of the smaller arteries, and the damage of delicate organs. Still it probably does not require additional force to move the arterial column of blood, and there is, therefore, no additional strain upon the left ventricle, and no likelihood of its necessarily becoming hypertrophied. It is, therefore, as already said, difficult to understand why it should be thought that disease of the coats of the aorta should be the cause rather than, as I believe, the effect of hypertrophy of the left ventricle. By adopting the latter view we have, too, a ready explanation of the arterial disease, which, in the other view, would still have to be sought for."

And certainly there can be no good reason to doubt that arterial tunics, when subjected to unusual and prolonged extension may undergo a compensating increase of thickness and strength by addition to their natural texture; in other words, by true hypertrophy, and that subsequently, when the powers of nutrition become impaired, these arterial coats may not only cease to become hypertrophied, but may even degenerate into fatty or calcareous matter.

Dr. Kirkes also argues in favour of the view before stated, from the almost exactly parallel condition which is witnessed in the pulmonary artery in cases of emphysema, and consequent hypertrophy of the right ventricle. In this case the dilating air-cells compress and partially obliterate the pulmonary capillaries, and hypertrophy of the right ventricle is the natural sequence to the interruption of the flow of blood through the pulmonary artery. Interrupted in its flow through the capillaries and impelled from behind by an hypertrophied ventricle, the blood distends the pulmonary artery and its branches, and soon these vessels become thickened and degenerated. Now, as in these cases the aorta rarely presents any evidence of disease, this fact must be an extremely strong argument against the view that disease of the coats of the arteries is a constitutional matter, and not one due to a local cause.

It being very probable, then, that hypertrophy of the left ventricle induces, rather than results from, arterial disease, it may be expected that such disease would be found in nearly every case of hypertrophied left ventricle. And what information do we gain on this point from an analysis of cases? Dr. Kirkes answers:

"One hundred and eighty cases in which I found the left ventricle manifestly hypertrophied, were thus analysed. Out of these there were 121 in which the aorta was more or less decidedly diseased, 34 in which it was not examined or not noticed, and only 25 in which it was said to be healthy. Omitting the 34 cases in which the arteries were not particularly examined, we have a residue of 146, in all, except 25, of which, the aorta was diseased. It is evident, then, that arterial disease is a very common attendant upon hypertrophy of the left ventricle.

"Yet there were 25 cases in which there was no obvious disease of the aorta. How are these exceptions to be explained, if the view be correct that an hypertrophied left ventricle is the real cause of the arterial

diseases? An examination of them tends to strengthen rather than to weaken the statement. For, in order that the arterial system should receive the full force of the hypertrophied left ventricle, and suffer in proportion, it is evident that nothing should impede the ejection of the whole mass of blood from the ventricle at each systole. If there be disease of the aortic valves, sufficient to produce obstruction at the orifice, or to allow regurgitation during the diastole, then the aorta and its branches will be relieved from a large part of the ill effects of an hypertrophied ventricle, for much of this extra force will be expended in driving the blood through a narrow aortic aperture in the one case, while in the other, supposing there is no obstruction, which however is rarely the case in regurgitant disease of the aortic valves, the coats of the distended arteries will be, during the diastole, speedily relieved of much of their excessive pressure, by the return of part of the blood through the insufficient sigmoid valves.

"If, again, there be, together with or independent of disease of the aortic valves, sufficient disease at the left auriculo-ventricular opening to impede the flow of blood from the auricle to the ventricle, or to allow of regurgitation during the systole, or, as often happens, of both together: here, also, the arteries will be relieved from the excessive force to which an hypertrophied ventricle would, but for some such intervening condition, have subjected them. One might expect then that, in accordance with these views, the arterial system would be found comparatively free from degeneration when comparatively little subjected to the condition supposed likely to lead to it, viz., prolonged excessive pressure on their walls; while, on the other hand, it would exhibit it in the most marked degree in those cases in which the full force of the supposed exciting cause was brought to bear upon it, as, for example, in those striking instances in which, associated with renal disease, there is extreme hypertrophy of the left ventricle, without any attendant valvular affection. Now, the twenty-five apparently exceptional cases, in which the left ventricle was hypertrophied, and the aorta healthy, instead of militating against, help to demonstrate these points most completely; for, with but two exceptions, there were, in all the instances, intelligible reasons why the aorta should not have been diseased. Thus, in fourteen, there was extensive disease of the aortic or mitral valves, or of both, sufficient to impede the free exit of blood from the left ventricle into the arterial system. This was evidenced both by the nature of the valvular disease, and, in many of the cases, by an unusually narrow calibre of the aorta, and a corresponding thinness of its walls. This narrow state of the aorta, with thin healthy walls, I have frequently found in cases in which it was evident that an unusually small amount of blood habitually traversed the canal. It has its converse in the wide channel and thickened, but structurally-healthy, walls of the aorta or other arteries through which an unusually large amount of blood continually passes. In four, the hypertrophied left ventricle was associated with disease of the kidney, which ran a rapid course, killing, with acute dropsy, probably before the arteries had time to manifest, in disease of their walls, the ill effects of the over-straining to which the hypertrophied ventricle must have subjected them. In two, the pericardium was adherent, and thus the ventricle would be hampered in its action, and prevented from expending its full force on the blood expelled from it.

Similar mechanical impediment to the free action of the heart existed in two other cases—the thorax being distorted in one, the lungs extensively compressed by old false membrane in the other. In the remaining case, the hypertrophy of the left ventricle was only slight and need not be taken into account.

"With but two exceptions, therefore, upon which at present it is scarcely worth while to dwell, the twenty-five cases, which at first seemed to be exceptions to the statement that arterial disease is apt to occur in all cases of hypertrophy of the left ventricle, exhibit in the state of the valves or in other conditions, intelligible reasons why such arterial mischief should not have resulted. Moreover, it should be observed that in much more than half of these cases the amount of ventricular hypertrophy was only moderate, and in most of those in which it was great there was either extensive valvular obstruction, or rapidly fatal disease of the kidney, to explain the absence of arterial mischief. The state of the kidneys, too, in these cases requires a word of comment. In seventeen out of the twenty-five these organs were healthy, so that in them the hypertrophy was probably entirely due to mischief in and about the heart itself, and was therefore probably no more than sufficient to overcome the local obstruction, and to propel, with requisite but not excessive force, the natural amount of blood into the aorta. In only eight were the kidneys diseased, and out of these, four were rapidly fatal; so that in only four out of the twenty-five had the arteries to bear for any lengthened period the effect of the additional hypertrophy induced by the renal disease. This is very different from what was observed in the sixty cases in which the arteries were extensively affected. For in at least twenty-eight out of these the kidneys were found diseased, and, no doubt, this renal affection was an important additional cause of the hypertrophy in many, and apparently the only cause in at least twenty-two, in which there was no valvular disease, or other local cause of cardiac obstruction to account for it. So that in these twenty-two the full force of the hypertrophied ventricle would fall on the arteries, and ultimately lead to their disease; while in those cases in which the kidneys and the valves were affected together, the additional hypertrophy induced by the renal disease would probably act injuriously on the arteries, that resulting from the valvular disease being probably only sufficient to overcome the local obstruction, and no more. There were, indeed, only seven out of the fifty-seven in which, with valvular disease, hypertrophied left ventricle, and extensive affection of the arteries, the kidneys were found healthy. It is necessary to scrutinise these seven cases as carefully as the twenty-five cases of valvular disease without affection of the arteries, in order to determine why the arteries were diseased in them, and not in other instances of valvular disease combined with healthy kidneys. For of the latter set it was observed that the amount of hypertrophy undergone by the left ventricle was probably no more than sufficient to compensate for the obstruction offered to the exit of blood from this cavity into the aorta, and not enough to propel an undue amount with undue force; but that if disease of the kidneys be superadded to the valvular disease, the additional hypertrophy thus induced will all fall injuriously upon the aorta; while if the kidneys alone are diseased, the valves being healthy,

the whole amount of the consequent hypertrophy will fall upon the arteries.

"Now, a careful examination of these seven cases showed, in the first place, that, in every instance, with but one doubtful exception, the mitral valve was efficient, so that, there being no regurgitation into the auricle, all the force of the ventricle, which in nearly every instance was greatly hypertrophied, would be expended in the direct course of the blood. If the obstruction at the aortic orifice were great, it would be largely consumed there; if little, most of it would go on to the arteries, and act injuriously upon them; if there were no obstruction at all, then the whole force would probably be expended upon the arteries. In three of the cases there was considerable obstruction, and, combined with this, there was evidently aortic regurgitation. The effect of both these conditions would naturally be to relieve the arteries of a considerable amount of the extra distension to which the hypertrophy of the left ventricle, which was very great, would otherwise have subjected them; and, as might have been anticipated, the amount of aortic disease in these cases was much less considerable than in those cases in which there was no such obstruction. In the remaining four, the aortic obstruction was very slight, so that, with complete efficiency of the mitral valve, the full force of the contracting ventricle would be conveyed into the arteries, and distend them in an unwonted degree. Instead of being exceptional, therefore, these seven cases, like the twenty-five other apparently exceptional cases, are really in complete accordance with the view that the amount of arterial disease is in great measure proportioned to the amount of force with which the hypertrophied left ventricle can act directly upon the coats of the aorta, being greatest when the obstruction at the aortic orifice is least, and *vice versa*. Additional confirmation, too, is furnished by the cases of slight aortic disease associated with disease of the valves; for in the great majority the amount of mischief in the arterial coats was very trivial, especially when there was manifest obstruction at the aortic orifice. The canal of the aorta, too, in many such cases was mentioned as being narrow, which is further proof that, although the left ventricle was hypertrophied, no increased, but rather an unusually small amount of blood, was propelled into the arterial system.

"We seem, then, to be led to this conclusion, that hypertrophy of the left ventricle is apt to be accompanied by disease of the coats of the aorta, but that this concomitant disease is far more likely to ensue when the valves are healthy than when they are diseased, and this for the reasons just stated."

It is to be understood that the foregoing remarks on the probable cause of arterial disease in general have relation chiefly to the larger vessels.

Pathological and Practical Observations on Diseases of the Alimentary Canal, Œsophagus, Stomach, Cæcum, and Intestines. By S. O. Habershon, M.D., Assistant-Physician to Guy's Hospital, &c. (London, Churchill, 8vo, pp. 387, 1857.)

Diseases of the stomach have, during the last few years, received considerable attention, and our medical literature has been greatly enriched by the labours of Budd, Handfield Jones, Chambers, Brinton, and others; but the subject is far from exhausted, as all who read the present work will find. Indeed, a work so full of valuable cases and sound deductions must always be welcome to the practitioner who is anxious to increase his stock of knowledge.

The chapters of this work are divided according to the anatomical divisions rather than in a strictly pathological manner. The first chapter contains many interesting cases of disease of the Œsophagus, some of them obscure in their pathology, and very insidious in their origin; some instances of ulceration, perforating the trachea or bronchi, which Dr. Habershon has described, have generally, and we believe incorrectly, been considered as instances of cancerous disease. The forms of disease of the stomach, the subject of the next section, have obtained from authors very considerable attention. It is the author's opinion, we believe, that there are forms of ulceration, superficial and evanescent, which leave scarcely more trace in the mucous membrane of the stomach than the aphthous ulceration of the mucous membrane of the mouth, whilst others are permanent, and show themselves after death; and that in some respects we find the same forms of diseased action in the mouth as in the stomach; the inflammatory congestion, perverted epithelial growth and secretion, sluggish condition of the circulation, or acute inflammatory disease, as stomatitis, as well as fibroid and cancerous disease. Ulceration of the stomach is probably a more common condition than is generally supposed, and in many instances yields to judicious treatment; and the instances adduced show that there are several distinguishing marks by which it may be known from cancer. Fibroid degeneration of the pylorus has generally been considered as of a cancerous nature; and whilst we are unable to remove this almost certainly fatal form of disease, we may, as in cancer, do much to mitigate the symptoms and to prolong life. During the time that this work has been in the press, the investigations of Dr. Murchison on gastro-colic fistula have been published. He has shown, by extensive research, the pathology of these cases by collecting the experience of numerous observers. In the two or three cases that have come under the author's observation, it has appeared that cancerous growth in the stomach had led to adhesion with the omentum, or colon, or both, that new product has become effused, and the mucous membrane of the colon infiltrated, and the perforation taken place from the disintegration of this secondary product, rather than by direct perforation from the part primarily affected; this appeared to be the reason, in the case recorded, that no fæcal vomiting took place.

In the so-called functional disease of the stomach, chemical research has removed much that was obscure, and will do still more to clear up the pathological changes induced; and the investigation of the physiological connections of the sympathetic nerve and the branches of the semilunar ganglia will enable us more correctly to estimate the very varied symptoms produced in dyspepsia, many of which have their origin in this source.

The chapter on the Duodenum presents us with instances of disease which closely simulate disease of the pyloric extremity of the stomach.

The next chapter is on Gastro-Enteritis and Enteritis, diseases in which correct diagnosis is very important; in the latter class of disease, especially, life may be easily sacrificed by time thrown away, and by improper treatment; in the former, with judicious diet, warmth, demulcents, &c, recovery generally takes place. "Whilst we strongly recommend, in many of these instances of gastro-enteritis, the avoidance of mercurials, the value of salines, of bicarbonate and chlorate of potash, and carbonate of soda, are well known to those who have carefully watched the effect that has followed their administration."

In the chapter on Strumous Disease of the Intestine and Peritoneum Dr. Habershon has sought to show that these are only part of a general perverted nutrition, and that, in many instances, disease in other organs is entirely obscured by the more marked affection of the abdominal viscera; here, also, he strongly urges the avoidance of mercurial medicines and of drastic purgatives; and says that the lives of many delicate children are sacrificed by worm powders and quack nostrums administered in these diseases.

The next class of cases in Chapter VIII., is on diseases of the Cæcum and its Appendix. Here he has shown that very many instances of cæcal distension and of local enteritis arise, as well as the more serious class consequent on perforation of the appendix; he has also given numerous instances of these forms of affection, and their perusal will show the great similarity in the symptoms and their general course. Dr. Burns, in a valuable paper in the 'Medico-Chirurgical Transactions,' described, several years ago, some of these affections. It would appear that the symptoms of cancerous disease of the cæcum are different from simple cæcal enteritis and perforation; and that in many cases we may discriminate the character of the complaint. It will be found that treatment may do much to relieve and to assist the cure of cæcal disease; the pain seeks for rest, but it is well after the acute pain has subsided, still to maintain absolute repose for several days. The bowels are often confined, but the use of purgatives generally aggravates the disease without effecting the desired operation; it is better obtained by the application of leeches and by opium; the use, also, of mild mercurials with opium, in these cases, appears to hasten the subsidence of the morbid condition.

In the ninth chapter the author points out the characters of the several forms of Diarrhœa, not forgetting the fact that diarrhœa is merely a symptom of very varied conditions, and that in many instances it passes almost imperceptibly into dysentery.

Dysentery and Colitis are the subject of the tenth chapter; and

the instances adduced show that inflammation of the colon, of most severe form, arises in our own country. Most of the writers on this subject are those who have observed it abroad in its worst forms. In some of the cases typhoid fever was simulated; in others, perforation of the colon had taken place; in one there was pyæmia and commencing suppuration in the liver; in several chronic cases the secondary effects were shown in producing contraction of the intestine, perforation, and artificial anus, &c.; as regards abscess in the liver, in one the abscess had dried and contracted; in another, fresh diseased action was set up around it, and abscess in the brain the result. He confesses that in some of the most severe forms all treatment is ineffectual to cure, whilst it partially soothes and relieves; but in the great majority of instances demulcents by the mouth, and enemata, astringents used in a similar manner, opium, ipecacuanha, &c., avail to stay the disease, and shorten its duration.

The author had intended to have given some observations on Asiatic cholera, but for several reasons he has not done so; firstly, because although the disease manifests itself more apparently in the disturbed functions of the alimentary canal, it has not been clearly shown that the disease is really one affecting alone or principally the abdomen; and secondly, because the facts known in reference to this disease are better and more clearly given in the report drawn up by Dr. Baly and Dr. Gull.

In the chapter on Typhoid Fever, he has merely described the condition of the abdominal affection, without entering into the general question of fever, and its treatment;—in the latter, it is well to guard against the danger of so freely administering opiates to check diarrhœa as to lead to cerebral oppression, and excessive engorgement of the lungs, from imperfect performance of the respiratory function.

In the chapter on Colic, he has cursorily spoken of the simpler forms of the disease, and separated the more severe forms of ileus—internal strangulation, intussusception, and cancerous disease of the colon, in Chapter XIV. It will be found that whilst the latter conditions bear strong general resemblance in producing often fatal constipation, they may, in many instances, be distinguished, the one from the other; intussusception having close resemblance to simple colic, and, in not a few instances, accompanied by discharge of bloody mucus, or with actual diarrhœa; this latter symptom sometimes arises even with cancerous disease of the sigmoid flexure. He has very strongly urged the avoidance of drastic purgatives, calomel, colocynth, and even milder purgatives, and as strongly recommended the free administration of opium; the cases detailed almost uniformly show, that where purgatives were given, vomiting, pain, and distress were increased, whilst these and other symptoms were, on the contrary, relieved by opium. Opium, in such cases, appears to be the best means of procuring relief to the bowels, if it be possible. The chapter on Worms is very short.

The cases of Suppuration in the Abdominal Parietes, and of Perforation of the Intestine from Without, are an interesting series; many of them obscure in their diagnosis, and very varied in their

course. Great care is required, attention to the symptoms as they become fully developed, and the avoidance of hastily aggravating the symptoms by too active treatment.

A Glucometer for determining the amount of Sugar in Diabetic Urine, &c., adapted for Clinical Investigations. By A. B. GARROD, M.D., Physician to, and Professor of, Materia Medica at University College, London. (Medical Times and Gazette, December 5, 1857.)

The principle upon which the glucometer is constructed rests upon the fact, that glucose sugar (C_{12} H_{14} O_{14}) when boiled with carbonate of potash gives rise to an amber colour, the depth of the tint depending upon the amount of sugar present. Bicarbonate of potash produces no such change of colour, and the tint with caustic potash may vary from other causes than the quantity of saccharine matter.

The apparatus consists of a standard, a graduated tube of the same caliber as the standard, and an accurately divided minim measure. The standard contains a solution having the exact tint produced by half a grain of diabetic sugar to the fluid ounce: *it should be kept from the light when not in actual use.*

Method of employing the Glucometer.

1. *Qualitative Analysis.*—Put into a test tube a small quantity of the urine and add about an equal bulk of liquor potassæ, Ph. Lond., heat over a spirit lamp, and allow the fluid to boil for half a minute. By this operation (Moore's test) we ascertain whether sugar is present; and, by observing the amount of colour, have a guide to the subsequent dilution of the urine, which is often necessary before proceeding with the quantitative analysis, in order to prevent the graduated tube being of inconvenient length.

2. *Quantitative Analysis.*—If the tint in the above experiment be not deeper than an amber red, no dilution will be required before it is examined; if of a dark red, the urine should have about its own bulk of water added to it; if of a reddish brown, three times its bulk; if of a dark brown, seven times, &c. This dilution may be readily effected by means of the graduated tubes, employing about a drachm of the urine for the experiment. Having made the necessary dilution with distilled water,* accurately measure in the minim glass half a drachm (30 minims) of the liquid, and add an equal amount of the solution of carbonate of potash,† introduce these into a small flask or large test tube,‡ and wash out the measure with about a drachm and half of

* A substitute for distilled water in the above analysis can be obtained, by adding a few grains of carbonate of potash to ordinary water, and allowing the carbonate of lime to be deposited, then pouring off the clear fluid.

† The solution of carbonate of potash is thus prepared: Dissolve four ounces of carbonate of potash in six fluid ounces of water, and filter.

‡ A small German glass flask, of about an ounce and half capacity, is best suited for the experiment, which can be held over the spirit lamp by a small holder; if a test tube be employed, it should not be of less capacity than the flask.

water. Heat to the boiling point, by means of a spirit lamp, and keep the liquid at that temperature for five minutes; if the contents of the flask be found to have a colour much above that of the standard, water may be added; and when somewhat cool, the whole transferred to the graduated tube, and dilution carefully made until the tint exactly accords with that of the standard. Care should be taken, on each addition of water, to ensure a thorough admixture of the fluid in the tube. All the required data for determining the amount of sugar are now obtained. Suppose a sample of urine when treated with liquor potassæ to give an orange red colour, and that it has afterwards been increased to four times its original bulk by the addition of three parts of water; again, suppose that the half drachm employed in the quantitative analysis requires to be further diluted, so as to occupy $6\frac{1}{2}$ drachms before the exact tint of the standard is obtained; such urine would contain 26 grains of sugar per fluid ounce; for the first dilution increases the bulk fourfold, the second 13: therefore four times thirteen, or 52 half grains, or 26 grains of sugar are present. If a portion of the 24 hours' urine is made use of, and the total quantity measured, the daily elimination of sugar can be readily determined.

The method of ascertaining whether the tint of the liquid corresponds exactly with that of the standard is to hold the tubes, side by side, directing them to moderately bright light, such as that of a white cloud, sometimes a thin piece of writing paper placed behind the tubes enables the identity of tint to be better observed. Lamp or gas light is not well adapted for the experiment.

Should the urine contain but very little sugar, some slight alteration in the process may be made; one or two drachms may be heated with but a small quantity of the solution of carbonate of potash, and without the employment of more water than is sufficient to wash out the measure; when the amount of sugar is less than half a grain to the ounce, the glucometer can only give approximate results.

If the urine contains much colouring matter, which seldom occurs in diabetes, the fluid may be completely decolorized by the addition of some animal charcoal (bone black), and subsequent filtration, an operation readily and speedily effected.

Lastly, should the liquid be found not perfectly transparent, it should be passed through a small paper filter before dilution to the standard tint, care being taken to wash the filter with a little water; when distilled water has been employed throughout the analysis cloudiness is seldom observed.

It should be remembered that the correctness of the result depends upon the accuracy of the measurements, and on the careful comparison with the standard.

A Manual of Medical Diagnosis, being an analysis of the signs and symptoms of disease. By A. W. Barclay, M.D., Assistant-Physician to St. George's Hospital. (London: Churchill, 12mo, pp. 612, 1857.)

It cannot well be doubted that medical diagnosis is not taught with the same precision and clearness in this country as in many parts of the continent of Europe, and especially in the hospitals of Paris; and hence an attempt to remedy this deficiency must necessarily be received with favour. We are bound to say, also, that Dr. Barclay has good reason to be satisfied with his labours, and that his shortcomings are little more than those which must necessarily exist in a first edition, where the subject is so vastly overgrown.

The order in which the different diseases are considered is that followed at St. George's Hospital, and to this the author patiently conforms, after certain preliminary chapters upon the method of diagnosis, the duration and sequence of phenomena, and the general condition of the patient.

In illustration of the style of the work, we take the remarks on Paraplegia, upon which we now chance to open.

"*Paraplegia.*—Rarely a sudden seizure except after injury of the spine, it is but seldom dependent on cerebral disease; in both respects it stands in complete contrast to hemiplegia. As in hemiplegia, however, the power of movement is generally more affected than the sensibility; but loss of the one seldom exists without partial failure of the other. Its characteristic is that it affects both sides of the body symmetrically, although not necessarily to the same degree. Its history points out its more or less gradual development, the occurrence of some accident or injury to the back, or it may perhaps afford evidence of disease of the brain. It ought always to be ascertained whether there be any deviation from the normal condition of the bones of the spine, or any point at which a sudden jar or blow causes more pain than elsewhere; we have then to consider how high the condition of paralysis extends.

"*a.* In its most common form, the disease has come on by slow degrees, observed first, perhaps, in one leg, and soon after in the other, and still exhibited to a greater degree in the limb in which it was first felt, but extending no higher than the loins; it has been preceded by no accident, is accompanied by no distortion, and is entirely without pain. The patient at first only feels some weakness in the knees, and very frequently in walking experiences a sensation as if he were treading on soft wool; the muscular sense is soon lost, and he needs to look at his feet to know where he steps; gradually the paralysis increases, and in the worst cases he is at length reduced to such a state that he has no power even to move his limbs in bed except with the assistance of his hands, and yet the upper half of the body is unaffected. This is dependent on a condition of simple atrophy of the lower part of the cord; there is no evidence of inflammation, acute or chronic, during life, no appearance of it after death; nor do the remedies which generally influence the progress of inflammation show any power over this disease.

"*b.* The form occurring next in frequency is that dependent on injury or disease of the spine—fracture or caries of the bone, and ulceration of the intervertebral cartilage. Displacement following on these causes may of itself give rise to paralysis; but in chronic cases it is seldom found unaccompanied by evidence of inflammatory action: we may, therefore, for all practical purposes, class along with those just mentioned, the paralysis consequent on concussion, which may result at once from the accident, and be perpetuated by inflammation, or may only supervene some time after the injury has been received. Here the diagnosis is generally facilitated by the history of an accident or by the evidence of the displacement which generally accompanies fracture, caries, and ulceration. But it sometimes happens that the ulceration of the intervertebral cartilage sets up inflammation in the membranes of the cord before displacement occurs; and while the pain on movement, and stiffness of the back, are only supposed to be rheumatic, symptoms more or less distinct of this inflammation are developed, and paralysis speedily follows. In such cases accurate diagnosis depends upon the correct appreciation of these symptoms, especially with reference to the seat of previous pain and stiffness; but it must be confessed that the knowledge often comes too late to be of much service in practice.

"*c.* Idiopathic inflammation of the cord, of itself, as we have seen, a comparatively rare disease, may give rise to symptoms of paralysis under three distinct conditions: they may be only the evidence of further disintegration, and the immediate approach of death; they may remain for a lengthened period in consequence of chronic thickening after the acute symptoms have passed by; or they may arise without any previous acute symptoms—the inflammation from the first presenting only the characters of a subacute or chronic form. An exposure to cold, the occurrence of pain in the back, and the comparative suddenness of the attack, point to a condition different from what has been recognised as the consequence of atrophy. The resulting paralysis is paraplegia, but there is very generally a considerable difference in the degree to which the limbs on each side are palsied.

"*d.* The pressure of a tumour on some portion of the cord may also give rise to paraplegia: when occurring in the lower region of the back, with no external evidence of its presence, it is not to be distinguished from cases of atrophy; but when the paralysis has come on gradually, when no history of injury is obtained, and no evidence of distortion exists, when the patient is free from pain, and the upper extremities are partially involved as well as the lower, good ground exists for suspecting the existence of this form of disease; when the breathing is also interfered with, its seat is probably at the base of the brain, and it may be expected soon to prove fatal.

"*e.* Spinal apoplexy is one of the rarest forms of disease of the cord. The symptoms are said to be very much what might have been anticipated from our knowledge of cerebral apoplexy: violent pain in the region of the effusion, general convulsions, sudden paralysis, which, in place of affecting one side of the body, occupies its lower half to an extent determined by the distance of the effusion from the top of the canal: it is generally unaccompanied by coma, and proves speedily fatal.

"*f.* General paralysis. This is the only form affecting both sides of

the body which has its seat in the brain: seldom complete until towards its close, it is marked by a general loss of muscular power, an occasional difficulty in articulation, tripping over or stuttering and slurring of one's words, as in the early stages of intoxication. It is seen in its most typical form in the paralysis of the insane, where, along with the gradual abolition of the muscular power, there is a corresponding gradual loss of mental consciousness, ending in perfect fatuity; it is usually preceded by symptoms of alienation of mind having more or less the character of exaltation of ideas: the patient imagines that he has acquired an enormous fortune; or the quiet, steady man of business becomes suddenly gay and extravagant; the delusions seem always to have the character of happiness and contentment.

"Pathological anatomy is not yet sufficiently advanced to point out in all such cases what are the actual changes in structure on which the disease depends, the brain being found in very various states after death.

"A corresponding form of disease exists without the accompaniment of insanity, in which it is also quite impossible to predict the actual lesion that will be discovered; and though in some rare cases no appreciable change of structure can be detected, yet their whole character warrants us in assigning disease of the brain as their cause. The consistency of the affection, its extension to one or other or both of the upper, as well as the lower extremities, makes it probable that the seat of disease is above the spinal column; and, having satisfied ourselves that the vertebræ of the neck are free from disease or distortion, our next step is to analyse with care the condition of the cranial nerves: deafness, unequal action of the pupils, strabismus, &c., are to be taken as evidence of disease in the cranium. It is worthy of remark that, while these nerves are affected only on one side, and one arm is perhaps decidedly weaker than the other, the legs are usually equally paralysed. The paralysis is sometimes coincident with a condition of spasm which affords pretty conclusive evidence that the disease is situated in the brain itself.

"Its progress is generally very slow, and the failure in muscular power may vary greatly in intensity in different parts of the body, being generally most complete where its existence was first recognised. In the paralysis of the insane, the defect in speech is generally that which is first observed; in other cases this is not so, but its existence is always very important in diagnosis. The absence of any other indication of disease besides loss of power, in some instances, has led to their being mistaken for cases of hysteria or hypochondriasis.

"*g*. Paralysis agitans: although clearly not belonging to the class paraplegia, the few remarks to be made on this disorder will best follow the description of general paralysis. There is no evidence of brain disease; the intellectual faculties are unimpaired, the cranial nerves are not liable to be implicated; indeed, it is not proved that its seat is in the nerves themselves, but, like chorea, it consists in some disturbance of the relation between nervous influence and muscular movement; there is no anæsthesia. It is chiefly a disease of old age, comes on gradually with shaking of the head or of the extremities; these are indeed its only diagnostic features: it is occasionally left as the result of convulsions in infancy.

"An analogous disease is seen in the tremor of those subjected to the

constant action of mercurial vapour. The tremor, in this case, is only excited by voluntary muscular movement, the individual at other times being perfectly still; and its seat is most probably in the nervous system, as it sometimes presents the phenomena of wakefulness and delirium. It is one of the examples of slow poisoning mentioned in an earlier part of this volume.

"In all the conditions just referred to we are very much at a loss in attempting to explain the relation of the phenomena to change of structure in the nervous system. This difficulty is much increased by the fact that, whatever be the form of lesion, and however local and limited in its nature, we have the same general result of paralysis affecting both sides of the body alike: and therefore practically the important considerations in paraplegia are limited to the recognition of acute and chronic disease, and caries or injury of bone. When any doubt is entertained with regard to the reality of partial paraplegia, it may be always solved by observing with due care the mode in which the feet are set down in attempting to walk: there is an indescribable uncertainty about the gait of a paraplegic which imposture can never successfully imitate."

Prostitution, considered in its Moral, Social and Sanitary Aspects, in London and other Large Cities: with proposals for the mitigation and prevention of its attendant evils. By WILLIAM ACTON, formerly Externe to the Female Venereal Hospital in Paris. (8vo, Churchill, 1857, pp. 189.)

Were we called upon to characterise the age in which we live, we should say it was especially remarkable for the elucidation of great social questions. As pioneers in this social reform, stand prominently forward the members of our profession: and we are much mistaken if the time is not approaching when that great social evil, prostitution, will obtain the notice which the sin of cities demands. To forward that movement will be the aim of the present article, and our readers may be pleased to possess an epitome of the most recent and interesting treatise which has yet been published.

In the first chapter the author defines what he means by the term prostitution, and there gives us a more comprehensive signification of the term than is usually assigned to it. For the sake of his argument, he concedes, as maintained by many divines and moralists, that all illicit intercourse is prostitution, and that this word is as justly applicable as those of fornication and whoredom to the female who, whether for hire or not, voluntarily surrenders her virtue.

In the second chapter we have the official returns from the police of the *numbers of women* known to the force as gaining their livelihood by prostitution. These returns, the author acknowledges, can show but a small proportion of the class, as it must include but a small number of those actually leading immoral lives. He places much more dependence upon the census tables and the proportions of children born out of wedlock; by these figures he renders it more than probable that 1 in 13 of unmarried women is a prostitute in the sense of the term above alluded to; and he further calls attention to the

extreme youth of the London street-walkers, as compared with those of any other city in Europe.

In speaking of the causes of prostitution, in his fourth chapter, he considers vanity, love of dress, low wages, want of employment for females, the herding of the sexes among the poor, and the training up of so many young women to the position of dressmakers and milliners, instead of as domestic servants,* as the most potent causes in the fall of women. Who can fail to be struck with the truth of the following passage?

"We believe we shall be borne out by the observation of all who have inquired much into the antecedents of this unfortunate class of women—those, at least, who have not sprung from the *very* low, or the actually vicious sections of the community—in stating that a vast proportion of those who, after passing through the career of kept mistresses, ultimately come upon the town, fall in the first instance from a mere exaggeration and perversion of one of the best qualities of a woman's heart. They yield to desires in which they do not share, from a weak generosity which cannot refuse anything to the passionate entreaties of the man they love. There is in the warm fond heart of woman a strange and sublime unselfishness, which men too commonly discover only to profit by,—a positive love of self-sacrifice,—an active, so to speak, an *aggressive* desire to show their affection, by giving up to those who have won it something they hold very dear. It is an unreasoning and dangerous yearning of the spirit, precisely analogous to that which prompts the surrenders and self-tortures of the religious devotee. Both seek to prove their devotion to the idol they have enshrined, by casting down before his altar their richest and most cherished treasures. This is no romantic or over-coloured picture; those who deem it so have not known the better portion of the sex, or do not deserve to have known them."

Diseases the result of prostitution forms the heading of the fifth chapter. Here we have a sad and almost incredible statement of the statistics of venereal diseases, which, if we had not all the authority derived from their having been collected within a short time at the different hospitals in London, we might have doubted. For the first time we learn that two out of three of the surgical patients at the Free Hospital have contracted diseases resulting from prostitution. At St. Bartholomew's, the proportions are about one half; in the army, one in five; in the merchant service, one in five. In speaking of what occurs in private practice, the author remarks:

"In the first place—the venereal affections now seen in private practice are slight. Patients come to the medical man early. The *mauvaise honte*, which formerly acted to their prejudice, is passing away, and the necessity for immediate treatment generally admitted. To this cause I attribute to a great extent the mildness of the disease, and the rapidity of cure in the majority of cases. No doubt can exist that improved treatment and a more correct diagnosis are operating in the same direction; science has been assisted by the almost complete abstinence of the

* We were glad to notice that Lord Brougham, in a recent speech at Liverpool, lent the weight of his authority to this cause, and corroborates Mr. Acton's opinion, which he says is too true, and by no means exaggerated.

upper classes generally from intoxication, though not from liquor, and the liberal ablutions now so much and so beneficially in fashion.

"The loss of the virile organ is, now-a-days, a thing almost unheard of in private practice. A surgeon might practise in this town for many years without gaining any experience of the affection of the bones of the nose which causes that organ to fall in. It is true that we occasionally meet with an obstinate case of this affection in highly strumous patients, but even these, under appropriate treatment, escape the sad deformity, and ultimately recover. I have, every now and then, cases of tertiary symptoms, which return again and again, and offer most rebellious instances of the virulence of the disease amongst the weak and debilitated; but still death from syphilis is almost unheard of in private practice. I did see one some time ago. It came on gradually from a want of rallying power in the system, and a few tubercles were found in the lungs. It is to be regretted that in the present day the indurated sore is not more rare, attended as it is with many sad sequelæ. Secondary symptoms are not severe, but, although slight, they linger on for months, now better, now worse, until the powers of the system, if well supported, get the better of the affections of the tongue or the eruption on the skin. Rarely, now, are the deeper structures affected, and patients generally, if not very injudiciously treated, completely recover within a reasonable time."

The author has called his sixth chapter "The Modern Harlot's Progress;" and, in our opinion, this is the one that will be most generally read and appreciated. We wish we had space to make longer extracts from it, as on acquaintance with the natural history of the harlot must hinge most of the preventive measures we can reasonably employ to check the evil, maintain her in sound health during the time she is running her career, and taking steps to assist her in her ultimate settlement and withdrawal from vice.

The author begins by stating:

"It is a little too absurd to tell us that 'the dirty, intoxicated slatterns, in tawdry finery and an inch thick in paint'—long a conventional symbol of prostitution—is a correct figure in the middle of the nineteenth century. If she is not apocryphal, one must at least go out of the beaten path to find her. She is met with, it is true, in filthy taps, resorts of crime, and in the squalid lairs of poverty—rarely courting the light, but lurking in covert spots to catch the reckless, the besotted, and the young of the opposite sex. And though such may be even numbered by hundreds, it must, on reflection, be conceded by those who have walked through the world with open eyes, that, considering the square mileage of the metropolis, and the enormous aggregate I am treating of, they are but as drops in the ocean. The Gorgon of the present day against whom we should arm our children should be a woman who, whether sound or diseased, is generally pretty and elegant—oftener painted by Nature than by art—whose predecessors cast away the custom of drunkenness when the gentlemen of England did the same—and on whose backs, as if following the poet's direction, *in corpore vili*, the ministers of fashion exhibit the results of their most egregious experiments."

Who but must acknowledge the truth of the following sketch?

"On the other hand, the sad career in prostitution of the sober-minded

woman, in whatever rank she may be, will be marked and affected by that quality. Whatever befall her in this vale of tears, the gentle-minded woman will be gentle still; and with this native hue will be tinged all her dealings with the sisterhood, and with the rough rude males whom ever and anon it is her fate to meet. If fortunate enough to have the acquaintance of some quiet man of means, she will not be puffed up with vain-gloriousness, but seeking comfort in obscurity, and clinging fast to what respect she may gain of others, will profess—what I dare say she really often feels—disgust at brazen impudence, and all the pomps and vanities. Whether this eschewal be from real delicacy, or considerations of economy, or because any sort of notoriety, instead of cementing, as in the case of others mentioned, would be fatal to their particular *liaison*, it is hard to say; but, however that may be, it is no less true that hundreds of females so constituted are at this moment living within a few miles of Charing Cross, in easy if not elegant circumstances, with every regard to outward decorum and good taste, and shocking none of the public who will not attempt unnecessarily close investigation, but for all that 'in a state of prostitution.' The ease and comparative prosperity that inflates the lighter woman into a public nuisance have no such effect upon such a one as I have spoken of last. They but cause her to prize each day more highly peace and quietness —more sadly to regret the irrecoverable past—more profoundly to yearn after some way out of the wilderness."

The author next combats the popular idea, that the harlot perishes in her career. He shows statistically negative evidence that venereal disease, common as it is, does not kill the prostitute, neither does she commit suicide.

"How then is the disparition," asks the author, "of this class of women to be accounted for, as they are neither stricken down in the practice of harlotry, nor by their own hands, nor by intemperance and venereal disease, nor would seem to perish of supervening evils in any notable proportion? Do they fall by the wayside, as some assume, like leaves of autumn, unnoticed and unnumbered, to be heaped up and to rot? Do unknown graves conceal, not keeping green the lost one's memory, and the obscure fallible records of the pauper burials at last confound all clue and chance of tracing her? Is she filtered again into the world through a reformatory? or does she crawl from the sight of men and the haunts of her fellows to some old homely spot in time to linger and to die?

"I have every reason to believe, that by far the larger number of women who have resorted to prostitution for a livelihood, return sooner or later to a more or less regular course of life. Before coming to this conclusion I have consulted many likely to be acquainted with their habits, and have founded my belief upon the following data. Whatever be the cause of a female becoming a prostitute, one thing is certain—before she has carried on the trade four years, she has fully comprehended her situation, its horrors and its difficulties, and is prepared to escape, should opportunity present itself. The constant humiliation of all, even of those in the greatest affluence, and the frequent pressure of want attendant on the vocation of the absolute street-walker, clouding the gaiety of the kept woman, and driving the wedge of bitter reflection

into the intervals of the wildest harlot's frenzy, are the agencies which clear the ranks of all but veterans who seem to thrive in proportion to their age.

"Incumbrances rarely attend the prostitute who flies from the horrors of her position. We must recollect that she has a healthy frame, an excellent constitution, and is in the vigour of life. During her career, she has obtained a knowledge of the world most probably above the situation she was born in. Her retnrn to the hearth of her infancy is for obvious reasons a very rare occurrence. Is it surprising, then, that she should look to the chanee of amalgamating with society at large, and make a dash at respectability by a marriage? Thus, to a most surprising, and year by year increasing extent, the better inclined class of prostitutes become the wedded wives of men in every grade of society, from the peerage to the stable, and as they are frequently barren, or have but a few children, there is reason to believe they often live in ease unknown to many women who have never strayed, and on whose unvitiated organization matrimony has entailed the burden of families.

"Others who, as often happens, have been enablad to lay by variable sums of money, work their own reclamation, as established milliners, small shop keepers, and lodging-house keepers, in which capacities they often find kind assistance from *ci-devant* male acquaintances, who are only too glad to second their endeavours. Others, again, devote their energies and their savings to preying in their turn, as keepers or *attachées* of brothels and other disorderly establishments, upon the class of male and female victims they themselves have emerged from.

"The most prudish will doubtless agree with me, that an important fraction of ex-prostitutes may be accounted for in the last of these categories. Such, indeed—as reformatories of the kind hitherto opened have been notoriously restricted in their operation—has been the customary theoretical disposition of all, or almost all, who were supposed not to die in the ranks or of supervening illnesses. On reflection, too, the reader may, perhaps, acquiesce in some occasional re-entrances into society through the portals of labour. Emigration also, under its present easy conditions, may be admitted to be an outlet to a certain extent."

This termination of the prostitute's career is not a mere matter of indifference to the public; on the contrary, it is of the utmost importance that society should distinctly know if it be true or false. If it be true, the clergy and philanthropists can no longer shut their eyes with indifference to the fate of the unfortunate, or refuse to aid us in endeavouring to amend her position. If it is true, see at once the importance to the woman herself. A new and inspiriting future is before her; she will have hope, and philanthropists should not lose an instant in informing her what her prospects really are. Instead of sinking lower and lower, and losing all self-respect, she may now be induced to try her utmost, earlier than she would otherwise do, to regain a position in the world; and in doing so, society cannot but be benefited, for it is well known that we have to dread the worst consequences from the desperate criminal. What a different and hopeful interest must not the public take in the harlot's career, if we have good reason to suppose that the erring sister is not altogether lost! What encouragement for her unfallen but sympathising sister to help

her, if she thinks that her aid will not be thrown away; what consolation it is to know that the reformatory is not alone the only resource to draw her from the paths of vice; what encouragement it is for the surgeon to keep her sound during this "chrysalis state," if she is to become the mother of Englishmen, or the wife of one who, although placed below our own class, is still a producer of our working classes. How pleasant to think that we can do something more than pity the street-walker, and that Providence has tempered the wind to the shorn lamb, although an uncharitable world has heretofore decreed in its worldly code that no sympathy should be wasted on the erring. Truly may it be said, that "L'homme propose, mais Dieu dispose."

In speaking of police supervision, the author at once rebuts the idea of wishing to introduce the foreign system. He alludes fully, however, to the system, pointing out its weak objections, which persons interested may consult with advantage; but shows what part we may copy from our neighbours. He then comes to a section which will be read with great interest; namely, the haunts and homes of prostitutes in London, and proposes a variety of regulations founded on a study of the habits of these women; for we would here remark, that our author describes vice not in the alluring garb that many writers of fiction have done, nor as the "raw head and crossbones" style of mistaken zeal, but in its every-day dress and aspect, for the purpose of drawing a moral, and inviting those in authority to remedy the most flagrant evils.

As an example, he gives the following description of a French dress-house, commencing:

"There are probably seven or eight French houses of this description in London, and I have reason to believe that the lodgers of all but two of them are rarely seen plying in the public streets. They are principally recruited by women imported from Paris, after being redeemed from the *maisons tolerées* of that capital by payment of the debts they have contracted. Each woman who under these conditions takes up a residence in England, is already shackled. She is clad by the keeper, who feeds her well, and allows her to enjoy herself in her own manner, perhaps one day a week, but under strict surveillance always, if on no other account, for the sake of the property upon her back. The natural question, 'Why does not this woman escape from this white slavery?' is best answered by other queries—Whither can she fly? What can she do? She speaks no English, and owes money for which she might, and no doubt would, be rigorously persecuted. On the other hand, she has been thoroughly trained as a prostitute perhaps from tender years, and has never regarded herself in any other light than as a chattel; is found in fine clothes, is well fed, and allowed liquor, for which Frenchwomen here domiciled soon contract a fancy. When used up she will be dismissed to practise for herself, or, less from charity than to clear the market of her presence, sent back to France."

And again, in speaking of houses in which prostitutes lodge, we have the following account of the women:

"They are usually during the day, unless called upon by their followers, or employed in dressing, to be found, dishevelled, dirty, slipshod and dressing-gowned, in this kitchen, where the mistress keeps her *table-d'hôte*.

Stupid from beer, or fractious from gin, they swear and chatter brainless stuff all day, about men and millinery, their own schemes and adventures, and the faults of others of the sisterhood. As a heap of rubbish will ferment, so surely will a number of unvirtuous women deteriorate, whatever their antecedents or good qualities previous to their being herded under the semi-tyranny of a lodging-house keeper of this kind. In such a household, all the projections of decency, modesty, propriety, and conscience must, to preserve harmony and republican equality, be planed down, and the woman hammered out, not by the practice of her profession or the company of men, but by association with her own sex and class, to the dead level of harlotry."

The author describes the dancing-rooms and pleasure-gardens, not to recommend them, but to support his argument that, as long as they are properly conducted, they *engender* little mischief, little evil, and shield society from evils of a more serious kind. He urges that the younger portion of the population should be better supplied with more rational amusements, and argues that as these resorts of to-day are better than the haunts of the vicious of a former generation, it is by no means impossible that the future may produce something of a yet better class for the recreation of the young, who, although example may do much, cannot be made virtuous by act of parliament.

We must, however, hasten on to the eighth chapter, "On Sanitary Regulations Abroad and at Home." Here we find a reliable summary of the stringent regulations applied to prostitution in foreign countries, about which so much has been said and so little hitherto understood in this country; and which the author considers would be intolerable among ourselves. He adduces instances to show the little good, if not positive evil, resulting from giving out-door relief to the prostitute:

"One, for instance, grievously afflicted, among the number catalogued above, attracted my particular notice by the superiority of her dress. She lived, she said, in her own lodgings in a street near the Strand. It is therefore clear she had no home to look to but the streets unless she paid her rent. In the course of the very same evening I was shocked to see this woman, accompanied by another, soliciting (as the Act of Parliament has it) in the street, and to reflect how frightfully she must contaminate any unfortunate man who might yield to her desperate entreaties. In dress and bearing she was by no means a female of the lowest class. No ordinary observer would have recognised her sanitary condition; but there she was—her rent, her food, her clothes to be earned—obliged to drink intoxicating liquor with every man who might offer it, dangerous alike to gentle and simple, the fast young man, or the tipsy father of a family who might be attracted by her pleasing face, and utterly heedless how much she was protracting, perhaps aggravating, her own sufferings. How comparatively futile our morning labours! how inefficacious the eleemosynary drugs!

"Advocates of the 'know-nothing' system, stand aghast! and ask yourselves if the toleration by society of this emissary of death in the attitude in which I saw her is reconcileable with society's duties (if duties it has) to God or man.

"Here you see a woman who, patched up by voluntary charity in the

morning, knows no other way—nay, whose only possible resource—to get her necessary food, or bed at night, is to sally forth into the streets. The ministers of charity eased her pain this morning; they dressed her sores and gave her drugs. So they will again next Thursday. She may be worse then, or she may have made a little progress in spite of her drinking and her fornication. But in a month she will be no nearer soundness than had she been taken care of by the State within the walls of our hospital for one week; and within that month what a scourge upon society will the surgeons not have kept afoot by their exertions! Here is the power of charity again working to waste. I will not insult you by supposing that you would have had that creature, and the hundreds of whom she is the example, spurned from the gates of every workhouse and hospital, and kicked from every domicile in the name of religion, to perish how and where they might by lingering loathsome disease. That were too absurd. But what you do, virtually, is this: You who, if your principles have any worth in them, should protest against the Lock Hospital, proclaim the foul ward a misappropriation, and excommunicate all who relieve or sympathise with the venereal pariah—you neither protest, nor proclaim, nor excommunicate. You testify against none of these things on principle, but only against their extension—against exchanging for a useful flame that inefficient rushlight of private charity which now serves only to make misery visible."

It would take more space than we have at our disposal to enter upon the amelioration proposed for our hospitals, and we must content ourselves with a single quotation more:

"It has, then, been thought desirable, from sanitary considerations, that every female exposing herself to the risk of contracting contagious diseases, should be advised to subscribe,* during her state of health and prosperity, to a self-supporting club; so that, when suffering from any affection whatsoever, incidental or not incidental to her vocation, she might in virtue and right of her own payments, ensure the remuneration of any qualified practitioner she may select, as well as an allowance while under treatment.

"It is therefore proposed that—under whatever patronage might be forthcoming—a working Committee, in the first instance by preference, of medical men—knowing, as they best of all men do, the destitution to which disease rapidly reduces crowds of heedless, ignorant, dissipated females, and the danger to others such too often bear about them,—should be invited, on behalf of society at large, and in the interest of the women themselves, first to organize, and then to introduce to the public, the scheme of such an association as I have shadowed forth.

"My proposal, in fact, stripped of all wordy superfluities, is to extend for the first time the advantages of Friendly Societies and Benefit Clubs

* "I feel that his inviting women to subscribe is the weak point of the whole system, so much so that I have been over and over again on the point of giving up the notion. It must instinctively be repugnant to every well-regulated mind to be instrumental in collecting money that is the wages of sin—the reward of iniquity. Could I have devised any other plan, willingly would I have done so. If the State, as I believe is its duty, or the public, undertook the foundation and maintenance of special hospitals, these words need not have been written. But as such institutions do not seem forthcoming from either source, I am forced back upon this proposal of co-operation; and have silenced my own doubts by the argument, that the direction of the wages of sin towards the salvation of the sinner, is more than enough to sanctify their handling."

to an order of women, whom I need not further characterise, but whom few will not admit to bear most important relations to society. I believe that, like their betters, they would soon learn and come to acknowledge the advantages of union, and would show the world that their proverbial improvidence mainly arises from their not being initiated into the practice and the value of thrift.

"The idea that such an institution would induce one woman more to enter upon sinfulness, will not for a moment bear the light of reason. It holds out no allurement of impunity, and providence was never an inducement to vice. But the plan will, I hope, on the contrary, enable many a poor creature who now is struggling in the waters of sin and misery, to rise once and again to the surface. I may say to the advocates of reformatories and nothing but reformatories, that the primary object of this Club would not be reformation or proselytism; it would be Christian charity towards the fallen, and Christian charity is the handmaid of religion. You must soften the steel before you can mould it; you must get in somehow the thin end of the wedge. A member of such an institution, though she were case-hardened as steel, must be something softened by the novel sense of unmercenary sympathy and consideration in the time of her sickness and trouble. But we would have no hand in the conversion of the prodigal. We would leave that to the Church, whose fitting office it is, and be content with rejoicing that we had been her harbingers and her pioneers—that we had opened the way to the heart and conscience, where she stood aghast at the work."

England and France before Sebastopol, looked at from a Medical point of view. By CHARLES BRYCE, M.D. (8vo, London, Churchill, 1857.)

The medical history of the Crimean war has still to be written. Materials for the formation of a history are, however, gradually accumulating; and Dr. Bryce has contributed certain highly interesting items of information respecting the comparative losses of the British and French armies before Sebastopol, and the sanitary condition of the French hospitals and camp.

Comparative strength and losses of the British and French armies.—The following statement of the number of British soldiers (non-commissioned officers and men) sent to the East during the Crimean war, and of the losses occaioned by death and invaliding, are derived from a return furnished to Dr. Bryce by the Director-General of the Army Medical Department:

The total strength of the British force of soldiers, exclusive of officers, originally embarked for the East, and added during the progress of the war, up to the date of evacuation of Crimea		93,959
Reduced by deaths, killed in action (2658), and died of wounds	4,446	
Reduced from disease	16,298	
Reduced by invaliding	12,903	
		33,647
Remaining effective strength of Crimean army, non-combatants exclusive, at close of war . . .		60,312

Ratio of deaths to strength, exclusive of killed in action	19·22	per cent.
Ratio of deaths to strength, inclusive of killed in action	22·7	„
Ratio invalided to strength	17·34	„
Total *hors de combat* at close of war	35·82	„
Total force restored to England and colonies	64·18	„

In the 'Moniteur' of the 23d October last, there is published, by command of the Emperor, to whom it was addressed, "*un rapport remarquable*," comprising the "personnel, matériel, et moyens maritimes" of the war, prepared by Marshal Vaillant. This document represents—

The effective of the French troops embarked for the East (envois de troupes)		309,268
Reduced by deaths from all causes, killed in action included (total des pertes de l'armée constatés)	69,229	
Invalided singly, and allowed leave on furlough, during the war	65,069	
Recalled during the war	20,390	
Unacconnted for (disparus)	1,781	
Total number returned to France and Algiers		227,135
Ditto, after signature of peace		141,676

Summary.

Taken to the East		309,268
Lost there		69,299
		240,039
Re-entered France and Algeria		227,135
Différence		12,904
Ratio of deaths and *disparus* to strength	22·99	per cent.
„ of invalids, as above, to strength	21·4	„
„ *hors de combat* (*différence* exclusive)	44·3	„
„ of troops in the East at close of war ("l'effectif de l'armée," 30 Mars, 146,240)	47·28	„

By placing the numbers quoted in closer juxtaposition, we find the following per centage results:

Armies.	Diminution of strength.		Hors de Combat.	Troops in the East at close of war.
	By deaths.	Invaliding.		
English	22·7	17·34	35·82	64·18
French	22·99	21·4	44·3	47·28

Certain anomalies and misleading phrases in the French report require pointing out. "(1.) By effective strength (l'effectiv) is usually meant soldiers fit for immediate active service. But in this category are numbered the ambulance sick in the Crimea on the 30th March, who, according to M. Baudens (*Revue des deux Mondes*, 1er *Juin*, 1857), amounted to 19,648 in the preceding month; besides the above, 10,448 under treatment in hospitals on the Bosphorus, on the very day when the report calls them effectives. By this means the War Minister augments his numerical belligerent force by upwards of 30,000 nominally effective troops; and so makes it appear that 93·44 per cent. of the Crimean army was restored to France after the signature of peace in a fit condition to have continued active hostilities—a demonstrable fallacy. (2.) 15,000 troops, collected in the regimental sick depôts outside Constantinople and elsewhere, are similarly designated and registered. (3.) The ministerial reporter allows himself a margin of 12,400 men not specifically accounted for. With regard to this rather considerable *item*, being, in the phraseology of the report, *une différence entre les envois de troupes et des hommes revenus de l'armée*, it is obscurely explained that the number is made up in part of persons subsequently disrated as soldiers, though so classed and counted on embarkation; and in part of others who, returning from and proceeding to the East oftener than once, were in consequence reckoned as multiples of a single individual, and thus to an indefinite degree enhancing the paper strength of the army. . . . Another strange avowal for a military return is, that 1780 men have unaccountably disappeared—*disparus*. They are added to the total loss, but no records vouch for the time, place, or manner of their deaths. Hence it is obvious the impossibility of making a really just and useful comparison between the losses by deaths sustained by the two armies respectively—the terms and elements of calculation furnished by each not being equivalent." pp. 18—20.

"A scrupulous collation of published and private *data* justifies me in submitting as the lowest summary of French losses for—

"Deaths—	killed in action . . , .	8,750
,,	ambulance service, from wounds and disease	31,000
,,	Constantinople hospitals . . .	32,000
,,	Dobrudscha expedition . . .	6,000
,,	on passage from Crimea to Constantinople	7,500
,,	Gallipoli, Varna, and elsewhere . .	3,000
,,	of invalids on passage from Turkey to France; and of sick and invalids, ditto, on evacuation of Crimea . .	5,000
		93,250."—p. 34.

The French Hospitals on the Bosphorus.—With the exception of the *Hôpital de Palais de l'Ambassade Russe*, devoted solely to sick officers, the sanitary condition of the French hospitals on the Bosphorus, during the spring of 1856, was very foul. At the commencement of the war, the general state of the French hospitals was good, but the accommodation, although very extensive, proved insufficient

for the immense amount of sickness which prevailed in the French army during the winter of 1856 and subsequent spring. Except in the solitary instance mentioned, the hospitals were overcrowded, the wards and corridors were exceedingly filthy, and the atmosphere was surcharged with foul effluvia from open bed-pans, badly constructed latrines, and insufficient ventilation. Moreover, the medical staff was far too small for the ordinary requirements of the patients; the bed clothing and bedding was deficient in quantity; there were no sufficient means for washing the patients' linen; and the food was not generous enough for patients who were prostrated by formidable zymotic diseases, while suffering, almost without exception, from scurvy.

The prevailing diseases in the hospital were remarkable for their epidemic character. Typhus, dysentery, and hospital gangrene abounded, the first-named disease being peculiarly prevalent.

The loss of life in the medical staff was almost unparalleled in hospital service. Forty-six surgeons died at Constantinople from typhus alone, and scarcely a member of the staff escaped an attack of the disease.

The French surgeon "is not answerable for the cleanliness of the sick, beds, wards, &c., and of the *dépendances de l'establissement*, all of which duties belong *à l'officier comptable d'administration*." The surgeon, also, is debarred from ordering articles of diet not contained in the ordinary diet scale (which is far from being a generous one), and should he venture to order "extras," it is at the risk of their cost being deducted from his pay.

Sanitary condition of the French camp and outbreak of typhus.—The French soldier in the Crimea, it is now notorious, passed the last six months under circumstances unfavorable to health—namely, overcrowding in mud-floored tents or earth-pits, surrounded by, and immersed in, deleterious exhalations from a soil sodden with animal and vegetable matters of all kinds; its surface being everywhere covered with indescribable filth, and its depths impregnated with the putrescence of tens of thousands human and bestial bodies. The severity of the season kept the men closely huddled under shelter, every possible entrance of cold air patched up, smoking and card-playing their only pastime, themselves the while disengaging fresh and augmenting old miasmic elements of disease. But there was superadded to these evils of habitation another morbific condition, which much intensified their virulence, moral and physical,—the insufficiency, namely, of wholesome food, as proved by the extraordinary violence of scurvy in the camp. Scarcely a Crimean soldier has been (April 1856), received into these hospitals since September in whom this sure evidence of noxious nutriment has not been unequivocally manifested.

It is not necessary to argue that a human being placed in these unnatural circumstances not only quickly loses his inherent conservative power to resist poisonous impregnation from without, but contracts, on the contrary, a susceptibility to receive specific disease; particularly when to these abnormal states are conjoined, as was the case here, improper clothing for day and night use; witness the

terrible amount of frost-bites,* the excessive bodily fatigue, the disquiets and sorrows of camp-life, hopes deferred, expectations destroyed.

It cannot be doubted nor denied that a vast proportion of the Crimean army was subjected to all these injurious influences last winter.

But while the French regimental surgeon thinks he perceives in the above conditions enough to satisfy any one as to the original source of the prevailing fever (typhus), the ambulance medical officer steps forward to explain its subsequent pestilential sweep and deadliness. This he does by contributing to our hygienic knowledge his personal experience of the real conditions of the places whither patients were taken for medical treatment on being seized with sickness. Take, for example, an original pen-picture of the Kamiesch ambulance, drawn by one who superintended its professional services. It consisted of forty wooden sheds, and fifteen to twenty tents. The former were designed to hold 26, the latter 8, though these numbers were frequently greater. The sheds, about 36 feet long, 18 feet broad, and 8 feet in height, gave a breathing space of 250 cubic feet to each inmate. There was a doorway only at one end, where also were placed the only means of ventilation and light.

One stove burning green wood or charcoal supplied some warmth; the floors were unboarded. The bedsteads were the *lits de camp*, designed to accommodate two persons, on which a *palliasse* was laid. The bed furniture consisted, sometimes of two blankets, commonly only of one, and a single coverlet; no sheets; neither straw of beds, nor tick, nor blankets, were changed for several months.

The first two requirements of an ambulance, namely, washing and drying-sheds, were never provided, and foul body-clothes were cast aside and left uncleansed. When sick and convalescent left hospital, they were supplied with the necessaries nearest at hand When a fever, diarrhœa, or scorbutic case, was taken to the dead-house, the vacated bed was forthwith occupied by the first fresh admission. The only preparation made for his reception was to wring dry and shake the lower blanket, and substitute the upper one in its place. The same proceeding to be repeated *pro re nata.* The sick tents were in no better condition as respects bedding and beds, and worse in regard to wet, cold, and wretchedness.

Of such-like ambulances there were fourteen during January, February, and March, each constantly containing from 800 to 1100 patients; the average deaths in each of them, on the authority just quoted, were from 20 to 25 daily, making an aggregate loss by death from disease alone, for this period, of at least 25,000 men, of whom five sixths were cases of fever. (Other than medical authority aug ment this estimate of mortality by one fourth.)

Typhus was prevalent in the French army during the winter of 1854-55. In the subsequent summer and autumn the disease lost some of its intensity, but during the winter of 1855-56 it broke out with extraordinary virulence under the conditions described.

* Frost-bite cases admitted into the hospitals: January, 1073; February, 990; March, 598 (*official*).

In the typhus studied in the French hospitals, as elsewhere, there was present the characteristic maculæ and petechiæ, very distinguishable from the rose-coloured papulæ of typhoid fever. In the former there was absent the abdominal symptoms so prominent and almost pathognomonic of the latter. Equally absent were the anatomic lesions which constitute the character of simple continued fever, namely, morbid states of the intestinal follicles, mesenteric ganglions, and spleen. Moreover, the identity of our home-bred typhus with the typhus of the French camp was shown—(1) in both having their origin and development under the influences of the same concurrent causes, which are, overcrowding, accumulation of filth, starvation, and wretchedness; (2) in both having the like modes of attack, the same characteristic eruptions, similar incidental complications, running a parallel course, and presenting analogous critical phenomena; lastly, in both being potentially infectious, and essentially functional disorders; that is, communicable by human intercourse, and having an existence independent of, and being capable of proving fatal without, any appreciable local or structural lesion" (p. 108).

"Official returns admit of a mortality of 1 in 7 of the typhus cases. I have grounds for believing that this is an understatement. . . . To estimate the deaths from typhus at four fifths of the aggregate mortality is believed moderate." (pp. 116—17).

II.

REPORT ON THE PROGRESS OF SURGERY.

On Senile Gangrene. By Mr. Edwin Lee, Surgeon to King's College Hospital. ('Medico-Chirurgical Review,' July, 1857.)

"Disease of the arteries," says Mr. Lee, "has very generally been considered as a cause of mortification, and the diseased conditions have by most authors been attributed to inflammation of the arterial coats. Earthy concretions, for instance, in the arteries of the lower extremities, since first noticed by Cowper and Naish, have been regarded as the cause of the closure of the arterial canals, and of the consequent mortification of the extremities. But, as is observed by Mr Hodgson, 'our knowledge of the power of the collateral circulation in every part of the body will not allow us to admit the obliteration of the trunks as a sufficient cause of mortification from a deficient supply of blood.' Some other cause of this kind of mortification had then to be sought, and a sufficient one was thought by some writers to have been found in the theory, that if the large arteries were diseased, the small ones would be so also; while others have supposed that the want of elasticity and organic power would interfere with the due supply of blood, in a degree sufficient to account for the effects observed in gangrene. Both these suppositions are entirely devoid of proof; for although in cases of dry gangrene the arteries are often found to contain bony deposits, and the smaller arteries are also sometimes found diseased, yet are these deposits not found in those situations in which the gangrene actually takes place, —for instance, in the pulpy vascular extremities of the toes, in the lips, cheeks, or lobes of the ears. In the arteries of the size here found is there never any bony deposit detected? That gangrene is not necessarily connected with disease of the arteries, is proved by the fact that it often occurs when no such disease is suspected. And, on the other hand, M. Cruveilhier has shown* that an artery which supplies a limb may be obstructed for a very considerable distance without any mortification following. If, however, an irritating injection be thrown into

* 'Anatomie Pathologique,' vol. ii, p. 301.

such an artery, mortification may readily be produced. It is remarkable that secondary mortification seldom attacks those structures which have a scanty supply of arterial blood, but that it almost invariably shows itself first in those parts which have the largest supply of blood-vessels. The vascular cheeks and lips in children, the vascular extremities of the toes in those in advanced age, are parts very frequently affected. If a simple deficient supply of blood were the cause of mortification, in such cases we should expect to find it first developing itself in the tendons and ligaments, and we should anticipate that the cellular tissue would perish always before the skin. The reverse of all this in secondary forms of mortification ordinarily occurs. The parts in which mortification in general shows itself have in truth a wonderful power of sustaining their life with a very small supply of arterial blood, and for a short time even when separated from the body. This fact is amply illustrated by the way in which portions of skin may be actually severed from the fingers and reunited, or by the length of time that a flap of skin taken from the forehead will maintain its life when converted into an artificial nose. In a case recently under the author's care, a flap of skin was taken from the side of the chest and placed across the neck in the centre of the cicatrix of a burn. It appeared to unite favorably in its new position, when the patient suddenly got into very bad health. The old cicatrix ulcerated, and left the portion of skin newly introduced attached by a small base, peninsulated. This portion of skin, however, remained unaffected by the ulceration, and ultimately reunited to the skin of the old cicatrix. In such cases, the arterial impulse through the transplanted portions of skin must be very slight; and in the face of such well-known facts, the want of arterial impulse can hardly be seriously maintained as a sufficient cause in itself for mortification. When a portion of skin is frozen, it turns white; and when great heat is suddenly applied, it does the same. Strong nitric acid placed on the surface of the skin or of the mucous membrane, will leave the centre of the slough which results of a dirty white colour. In these instances, it is reasonable to imagine that there may be an actual want of blood in the affected part. In some cases of spontaneous gangrene, the same may in all probability happen. But in these latter cases, which are comparatively very few in number, some unusual obstruction to the transmission of the blood through the arteries has generally been manifest; and it may fairly be presumed, from the want of pulsation in the arteries, and from the coldness of the affected part, and other symptoms, that in these cases of mortification a deficient supply of arterial blood was a principal cause of the mortification.

"In the vast majority of instances the parts affected with gangrene afford the strongest contrast to such appearances. The mortified part is commonly of a deep livid colour, evidently surcharged with blood, which it has not the power to propel. This is equally true, whether there be a mechanical cause to the return of the blood, or whether no such apparent cause exist. In either case, the deep livid congestion precedes mortification—a condition quite compatible with obstructed circulation in the affected part, but utterly inconsistent with a deficient supply of blood. But, it will be asked, do not the cases in which a ligature has

been applied to an artery in cases of aneurism, show that obstruction to the flow of blood through a large artery is often followed by mortification in the limb which it supplies? To this it must be replied, that it is a remarkable fact that mortification, in such cases, has only occurred when the ligature has been placed between the aneurism and the heart, and where, consequently, any softened fibrin or other morbid products which the aneurismal sac may have contained, have had an opportunity of becoming mixed with the blood of the limb upon the distal side of the ligature, and of producing their effects upon the nutrition of the parts there situated. Upon this subject we need only observe at present, that in thirty-three cases of aneurism collected by Paul Broca,* where the ligature was placed on the distal side of the sac, no instance of mortification occurred."

Having reason to doubt the correctness of the theory, that mortification is very generally to be ascribed to the blocking up of the arterial tubes by inflammatory effusion from the lining membrane, Mr. Lee entered upon some researches which led him to the conclusion previously arrived at by Virchow, that while the lining membrane of the arteries remains entire, no inflammatory effusion of lymph can take place from its free surface. He found, also, as Virchow did, that mechanical and chemical irritants, when applied to blood-vessels, produce their effect only, as far as any inflammatory exudation is concerned, on the internal and middle coats of arteries, or the outer coats of veins; and that the epithelial and fibrous longitudinal coats of blood-vessels may become detached, and when once detached, a plastic layer from the outer coats may be poured into their cavities.

"If, then," Mr. Lee asks, "we find that fibrin deposited in the heart may undergo a process of softening, and may then be conveyed in the course of the circulation to arteries of the smallest as well as of the largest diameter, and may there lodge, producing softening of the surrounding tissues, or even mortification, what must we suppose to be the result of similar changes when they originate in the arteries themselves?

"Fibrinous deposits not unfrequently form in diseased arteries, and may here, as elsewhere, undergo the process of softening. The product of this softening then, together with the *débris* of the internal coat of the artery, and the softened atheromatous deposit, are carried along the course of the circulation, until arrested in the smaller tubes, or in the actual substance of organs. Wherever they stop, other changes occur. In some cases the fibrin, still retaining some consistency, and adhering in its new bed, may become absorbed, and cause a puckering and contraction of surrounding parts. Nearly all arteries that have thus been obstructed have been found contracted after a certain time. This is so generally the case, that Professor Tiedemann, in describing this disease, has assumed for his title, *Arctation, and closure of the arteries.* In general, however, post-mortem examinations reveal that softening, accompanied by cell-development, has taken place in portions of fibrin

* 'Des Anévrysmes et de leur Traitement,' 1856.

that have been stopped in their course. When this occurs in a blood-vessel, it produces inflammation of its outer coats and neighbouring tissues; when in the structure of organs, it is accompanied by softening of the surrounding parts. If we find, then, as the result of disease of the arteries, that morbid materials find their way into the blood, and produce a separation of fibro-albuminous deposits which in their ulterior changes are liable to poison the different organs to which they are conveyed in the acute forms now noticed, we are led farther to inquire whether there are any chronic forms of the same affection. In cases of long-standing disease of the arteries, the products of morbid deposits between their coats, which have undergone the process of softening, must constantly pass into the circulation, as must also any portions of liquefied fibrin which have temporarily adhered to those parts where the lining membrane has given way. If the quantity of morbid deposit or of liquefied fibrin be small, it is probably disposed of without any great inconvenience, but when larger, it would appear that the contaminated blood has a tendency to lodge in the substance of the first organ to which it is conveyed. In parts where the circulation is vigorous, the impediment may probably be readily overcome, but in those parts in which the circulation is more languid (although perhaps they may contain a large quantity of blood), there we find the injurious effects produced. Now, these are exactly the conditions in which senile gangrene ordinarily occurs. A diseased artery gradually but constantly pours the product of fatty degeneration into the blood which is conveyed to the most distant and dependent part of the circulation. The excessive pain coincides with that which experiment proves to be the result of the injection of arteries with fluids which do not readily pass into the veins. The skin, which contains the largest amount of blood, and therefore the largest quantity of the morbid material, perishes first; and in succession the cellular membrane, bone, tendon, and ligament. If this be the true pathology of dry gangrene, it explains at once how futile amputation is likely to be while the original source of disease remains in the form of fatty degeneration of the artery supplying the limb. It explains also why opium and tonics are found to agree so much better than the antiphlogistic plan formerly recommended by Dupuytren. Finally, it explains how, when the morbid material which produces the gangrene ceases to be supplied, the patient may recover, as in case No. III."

The practical idea which suggests itself from these considerations is—

"That a diseased or partially obstructed artery may be more dangerous to a patient's welfare than one which is completely closed. The blood, in the case of the obliteration of the main trunk, would probably be conveyed to the extremity in diminished quantity, but flowing through collateral and comparatively undiseased channels, it would be more free from the admixture of any morbid matter which it might receive in its passage through the limb.

"A greater danger may therefore arise to a limb from the principal artery being partially or temporarily obstructed, than from its complete

and permanent obliteration. This point is illustrated by the following case, taken from Dr. Oldham's notes, and for which I am indebted to Mr. Birkett, of Guy's Hospital:

"CASE.—A very tall, healthy, muscular, and robust Scotch peasant, thirty years of age, was admitted into Guy's Hospital on the 15th of August, 1856, for a popliteal aneurism. On the 17th of August a 'temporary ligature' was applied to the femoral artery. The ligature was removed at the expiration of seventy-two hours. For the next four days everything appeared satisfactory, when on the morning of the 25th of August a small dusky spot was observed by Mr. Birkett on the dorsum of the foot. This spot increased, and it was evident that mortification had commenced. During the course of the day some hæmorrhage took place from the situation of the temporary ligature. This again recurred on the following day, August 26th, when amputation of the thigh was performed."

"Whether the partial and temporary obstruction to arteries by pressure in cases of aneurism is liable to be followed by any similar accidents to those attending upon the temporary ligature, experience has yet to decide. Three instances have lately come under the author's notice in which mortification of the leg followed the treatment of a popliteal aneurism by pressure. In two of these cases the femoral artery was at length tied, and before the mortification had apparently commenced."

On the hereditary transmission of tendencies to cancerous and other tumours. By JAMES PAGET, F.R.S., Assistant-Surgeon to St. Bartholomew's Hospital. ('Med. Times, and Gaz.' Aug. 22, 1857.)

With a view to the settlement of some questions concerning the hereditary transmission of cancerous and other diseases, Mr. Paget has embodied the results of 411 cases, falling under his own notice, in which he has noted whether the patients or their friends, did or did not know of tumours of any kind having occurred among their blood relations of the same or former generations. These results are given in four tables:

TABLE I.

Kinds of Tumours.	Total number of cases.	Patients of whose relatives some were known to have tumours.	Patients of whose relatives none were known to have tumours.
Serous and other barren cysts	16	2	14
Glandular proliferous cysts	2	..	2
Cutaneous epidermal and sebaceous cysts	19	9	10
Fatty tumours	19	4	15
Fibro-cellular tumours and cutaneous out-growths	5	..	5
Painful subcutaneous tumours	4	..	4
Fibrous tumours (not uterine)	17	..	17
Cartilaginous tumours	12	2	10
Cartilaginous and glandular tumours	9	1	8
Myeloid tumours	4	..	4
Osseous tumours	7	3	4
Mammary glandular tumours	23	5	18
Prostatic and other glandular tumours	4	1	3
Venous and arterial tumours (in adults)	6	..	6
	147	27	120
Recurring glandular proliferous cysts	1	..	1
Recurring fibroid and fibro-cellular tumours	7	3	4
Recurring cartilaginous tumours	1	..	1
Recurring mammary glandular tumours	1	1	..
	10	4	6
Schirrhous cancers	129	35	94
Medullary cancers	46	9	37
Epithelial cancers	65	13	52
Melanoid, osteoid, and colloid cancers	14		11
	254	60	194

TABLE II.—*Cases of Patients with Innocent Tumours, who had Relatives with Tumours.*

No. of case.	Patient's disease.	Relatives that had tumours.	Nature of the tumours in the relatives.
1	Cystic dilatation of mammary ducts	Mother	Cancer of the breast.
2	Cyst in the breast	Mother	Fungoid disease
3	Sebaceous scalp-cyst	Father; sister	Similar cysts in same part
4	Epidermal scalp-cyst	Mother	Similar cyst in same part

TABLE II—(*continued*).

No. of case.	Patient's disease.	Relatives that had tumours.	Nature of the tumours in the relatives.
5	Epidermal scalp-cyst and epidermal tumour on the sacrum	Mother; Grandmother	Wens on the head
6	Epidermal cyst in the neck	Father's brother; Grandmother	Tumour in same part Died with a tumour
7	Cutaneous scalp-cyst	Mother	Similar cyst in the same part
8	Epidermal scalp-cysts	One or more relatives	Similar cysts
9	Cutaneous scalp-cysts	Father and two of his brothers	Cancer of the liver
10	Cutaneous cyst and horn in the leg	Father's brother	Cancer
11	Cutaneous scalp-cysts	Mother; two sisters	Similar cysts in same part
12	Fatty tumour on the front of the neck	Mother	Similar tumour in the back of the neck
13	Fatty tumour on the shoulder	Aunt, and probably mother	Cancer of the breast
14	Fatty tumour over the clavicle	Mother	Cyst, probably bursal, on shoulder
		Aunt	Cartilaginous and glandular tumour
15	Fatty growth on the nape	Father	Similar growth
16	Cartilaginous tumour in the pelvis	Father	Ossified cartilaginous tumour of the radius
17	Soft cartilaginous tumours on chest and forehead	Mother	Cancer of the breast
18	Cartilaginous and glandular tumour over parotid	Grandmother	Cancer of the breast
19	Numerous bony tumours on bones	Father	Similar tumours
20	Bony tumour in the orbit	Grandmother	Wen on the neck and a soft tumour on head
21	Bony tumour on the mastoid process	Father	A tumour removed from his thigh
22	Mammary glandular tumour	Cousin	Nasal polypus
23	Mammary glandular tumour	Sister	Probably a similar tumour
24	Mammary glandular tumour	Sister	A tumour removed from the shoulder, not cancerous
25	Mammary glandular tumours in both breasts	Mother; Grandfather	Cancer of the breast Cancer of the face
26	Mammary glandular tumour	Aunt	Cancer of the breast
27	Glandular tumour over the parotid	Father; First cousin	Tumour in the cheek Cancer of the breast.

TABLE III.—*Cases of Patients with Cancerous Tumours, who had Relatives with Cancerous or other Tumours.*

No. of case.	Patient's disease.	Relatives that had tumours.	Nature of the tumours in the relatives.
1	Scirrhous cancer of breast	Cousin	Cancer of the breast
2	Ditto and a mammary glandular tumour in same	Grandmother	Ditto
3	Scirrhous cancer of breast	Sister	Ditto
4	Ditto	Mother	Ditto
5	Ditto	Mother ; sister	Ditto
6	Ditto	Mother	Ditto
7	Ditto	Mother ; sister	Ditto
8	Ditto	Mother's uncle	Cancer of the lip
9	Ditto	First cousin	Ditto of the womb
		First cousin	Ditto of the l p
10	Ditto	Mother's sister ; Mother's first cousin	Ditto of the breast
11	Ditto (Male.)	Mother	Ditto
12	Ditto	Sister	Ditto
13	Ditto	Father's mother	
		Father's sister	Ditto
14	Ditto	Father's sister ;	
		Father's cousin	Ditto
15	Ditto	Mother	Ditto
16	Ditto	Brother	Cancer of the eye
17	Ditto	Sister	Ditto of the breast
18	Ditto	Sister	Ditto
19	Ditto	Grandmother	Ditto
20	Ditto	Mother	Ditto
21	Ditto	Mother's aunt	Ditto
22	Cancer of axillary glands	Sister	Ditto
23	Scirrhous cancer of breast	Mother	Internal cancer
24	Ditto	Sister	Cancer of the breast
25	Ditto	Sister	Ditto
26	Ditto	Mother	Ditto
27	Ditto	Sister	Ditto
28	Ditto	Grandmother	Ditto
29	Ditto	First cousin	Ditto
30	Ditto	Mother's sister	Ditto
31	Ditto	Aunt	Ditto
32	Ditto	Mother ; aunt	"Cancerous"
33	Ditto	Great aunt	Cancer of the breast
34	Ditto	Two cousins of her father and one of their daughters	Cancers
35	Ditto	Mother	Cancer
36	Medullary cancer of great toe	Mother's father ; Father	Similar disease Cancer of the lip
37	Medullary cancer of one breast ; scirrhous cancer of the other	Sister	Scirrhous cancer of the breast

TABLE III—(*continued*).

No. of case.	Patient's disease.	Relatives that had tumours,	Nature of the tumours in the relatives.
38	Medullary cancer of breast	Mother; Uncle	Cancer of the womb Cancer of the face
39	Ditto of the jaw	Mother	Cancer of the breast
40	Ditto of the femur	Father	Great cancer of the face
41	Medullary subcutaneous cancers	Second cousin	Epithelial cancer of the face
42	Medullary cancer over the parotid	Father; Uncle	Tumour of twenty years' duration below the jaw Epidermal cyst
43	Ditto of cervical glands	Father	"Tumour in his inside. Fatal"
44	Ditto of the breast	Mother; sister	Cancers of the breast
45	Epithelial cancer of the lip	Mother	Tumour removed from or with the breast twenty years before death
46	Ditto of the labia, &c.	Sister; father's sister; mother's brother's daughter.	Cancer of the breast
47	Ditto of the lip	Grandmother	Ditto
48	Ditto (? soot) of the larynx	Brother	Epithelial soot-cancer of the scrotum
49	Ditto of the cheek	Aunt	Cancer of the breast
50	Ditto (? soot) of scrotum	Half-brother	Cancer (? soot) of the penis
51	Ditto of the tongue	Great aunt	Cancer of the throat
52	Ditto of the conjunctiva	Sister	Cancer of the breast
53	Ditto of the nose and face	Second cousin	Medullary subcutaneous cancers
54	Ditto of the tongue	Father	Cancer of the lung
55	Ditto (? soot) of the eyelid	Brother	Soot cancer of scrotum
56	Cancer (probably epithelial) of the tongue	Sister	Cancer of the breast
57	Ditto (? epithelial) in the pharynx	Mother's father, aunt, and grandmother	Cancer
58	Melanoid cancer of foot	Great grandmother	Cancer of the breast
59	Ditto in the scalp, &c.	Mother	Cancer at the base of the brain
60	Ditto in the shoulder, &c.	Mother	Cancer of the face, &c.

TABLE IV.—*Cases of Patients with Recurring Tumours, who had Relatives with Tumours.*

No. of case.	Patient's disease,	Relatives that had tumours.	Nature of the tumours of the relatives.
1	Recurring fibro-cellular tumour in the thigh	Mother; sister	Cancers
2	Recurring fibroid tumour in the leg	Brother	Cancer of the lung
3	Recurring fibroid tumour in the thigh	Father	Cancer of the tongue
4	Recurring mammary glandular tumour	Mother, Sister, Others	Cancer of the breast Fungoid disease Cancers (probably)

Mr. Paget's summary of these tables, and the inferences he draws from them, are as follows:

"The first table shows that of the 411 patients, 254 had cancerous, *alias* malignant, tumours; 147 had non-cancerous, *alias* innocent, tumours; and 10 had non-cancerous, but recurring, tumours.

"Among the 254 with cancers, 60, or 23·6 per cent., had relatives of the same or former generations with cancerous or other tumours.

"Among the 147 with tumours neither cancerous nor recurring, 27, or 18·3 per cent., had such relatives with cancerous or other tumours.

"Among the 10 with recurring tumours, 4, or 40 per cent., had relatives with cancers.

"According to these numbers, the respective hereditary tendencies to cancerous and to non-cancerous tumours would seem not very different. But an examination of the second and third tables discovers a great contrast between them.

"For (as Table III shows), among the 60 cancerous patients whose relatives had tumours, not less than 57 had cancerous relatives; but (as in Table II), among the 27 patients with tumours neither cancerous nor recurring, there were only 12 who had relatives with tumours like their own. The comparison of the respective probabilities of hereditary transmission would, therefore, be as 22·4 for the cancerous to 8·2 for the non-cancerous.

"The contrast appears the stronger in sight of the fact (also shown in Table II), that the greater part of the instances in which similar innocent tumours occurred in more than one member of the same family were limited to one kind of tumour. Of the 12 patients who had relatives with innocent tumours like their own, 7 had some form of cutaneous cyst of the scalp, leaving only 5, or 3·4 per cent., as marking the probability of hereditary transmission in all the other forms of innocent tumours reckoned together.

"It is hence certain that cancerous disease, or a tendency to it, is prone to pass by inheritance from parent to offspring, and to occur (pro-

bably by inheritance of common properties) in many members of the same family and generation. It may seem unnecessary to bring evidence of a fact so generally believed; but there are some who doubt it,* and many who are not aware of the large proportion of cases in which cancer may be referred to an hereditary origin. Moreover, a comparison of the two Tables (II and III) shows, by the contrast of the two groups of cases, the cancerous and the non-cancerous, how many instances of apparently hereditary origin of disease may be referred to accidental coincidence, or to the transmission, not of a diathesis, but of some peculiarity of the structure or composition of a part. When, for example, the child of a cancerous parent has a sebaceous cyst in the scalp, we can only count it as an accidental coincidence; but (as Table II shows) the cases of this kind are not very uncommon; and it might be right to endeavour to estimate from them a deduction to be made in the reckoning of the proportion of actually inherited cancers. For if, thus, dissimilar tumours may accidentally occur in members of the same family, so, in a certain number of cases, the occurrence of similar tumours in the same family may be referred to accident. However, as the deduction to be made on this ground can scarcely be calculated, and would certainly be less than the addition that we should have to make if we could reckon the cases of inheritance from patients with unknown internal cancers, I omit it, and thus sum up the general conclusions to be drawn from the tables:

	Per cent.
"Of patients with non-cancerous tumours (Table II) the proportion that has, or has had, relatives with tumours like their own is . . .	8·2
Ditto with tumours non-cancerous, but unlike their own	4·
Ditto with cancerous tumours . . .	6·8
Of patients with cancerous tumours (Table III) the proportion that has, or has had, relations with cancer is†	22·4
Ditto with non-cancerous tumours is . .	1·
Of patients with recurring non-cancerous tumours (Table IV) the proportion that has, or has had, relatives with cancers is . . .	40·

* The general ground of the doubt is, that cancer is so common that, among any number of persons, whether cancerous or not, a large proportion would be found with cancerous relatives. The answer to this doubt may be gathered from these tables, especially from the contrast between Tables II and III. But, it is said, people remember their relatives having diseases so serious as cancers, but forget or never heard of their having less important tumours. The answer is in the known proportion of cases of inheritance of the cutaneous cysts, a proportion considerably larger than that of inherited cancers.

† This is a larger proportion than is stated in my lectures. The difference is probably due to my having here reckoned scarcely any cases besides those of patients whom I have seen, while in the lectures I referred to cases collected from various sources. I have, probably, inquired with more than ordinary care into the family histories of patients, but I have not questioned cancerous patients more closely or more generally upon this point than I have those with other tumours. On the other hand, I have not reckoned as patients having no relatives with tumours those in whose cases I have recorded nothing concerning their families.

"A few words may be added concerning the last-named cases. The number of instances of these recurring tumours, which occur in the members of cancerous families, justifies an opinion which I have long entertained, but which it is very difficult to establish, namely, that such tumours often represent what may be called a gradual fading of the cancerous diathesis. The cases which I have tabulated are only those which I have seen; but I have heard and read of others like them, and believe that time will prove that, among the offspring of cancerous patients, and among the members of families in which cancer has occurred, there is a peculiar liability to the production of tumours, which will recur after repeated and complete excisions, though they are neither cancerous in structure, nor attended with similar disease in the lymphatics or other organs, nor with any cachexia but such as may be ascribed to their gradual influence on the constitution.

"If this can be proved, we may justly hold that this character of recurrence indicates the existence of the cancerous diathesis, either with less abundance or with less concentration of material than is required for the production of a cancerous tumour with all the typical properties.

"The imperfection of the diathesis may in some cases indicate its progressive, but as yet incomplete, development; but the probability that, in other cases, the diathesis is decreasing in hereditary transmission, is supported by facts in the history of other diseases. Thus, we know many of the liabilities of the offspring of gouty, and of phthisical, and of insane persons, and that their diseases, though they may be neither gout, nor phthisis, nor insanity, are yet of the same kinds—essentially the same diseases, but less manifested; or of the same type, but less strongly marked; and we know that success in the management of these diseases depends, in great measure, on a due recognition of their parentage. Now, the recurring tumours, I believe, illustrate the same principle in the pathology of cancers; and if so, they deserve the closest study, as being palpable examples that, in the hereditary transmission of morbid conditions, there is a tendency towards their becoming less, a tendency towards health.* This may be due either to dilution, or to changes comparable with those which restore an individual from disease to health; and very probably it is an example of that general law, according to which the deviations from the true specific form and composition, which constitute varieties in species, become in successive generations gradually less. till the perfect specific characters are regained.

"In practice, the recognition of recurring tumours suggests caution in speaking of what may follow the removal of any tumours from persons of cancerous family. And this caution should be the greater, the more the removed tumours deviate from the ordinary characters of innocent growths or of the fully developed natural structures. I think that the non-cancerous tumours most likely to recur are those which, at whatever date of growth, have structures similar to those of the natural parts in their very early embryonic state. Such are the recurring fibroid, composed almost wholly of elongated fibro-cells, and the recurring fibro-cellular, cartilaginous, and mammary-glandular, in all of which we find

* I think, too, that the histories of rodent ulcers, and of lupus, should be studied with a similar suspicion of their relationship to cancers.

abundant soft or liquid transparent blastema, in which the proper structures, when they are to be found at all, lie loose and disorderly in their most immature forms. Indeed, whether there be any suspicion of cancerous inheritance or not, all such soft tumours with imperfect embryo structures may be regarded with fear of their recurrence after excision."

On a ready method of determining the Presence, Position, Depth, and Length of a Needle broken into the Foot. By Mr. Alfred Smee. (Proceedings of the Royal Medical and Chirurgical Society, vol. i, numb. 3).

In the 'Medical Times' for the 14th of December, 1844, Mr. Alfred Smee has published a portion of a lecture on the means of determining the presence, general direction, and size of a needle in the body. Mr. Smee mentions the various means that may be employed for making the needle magnetic, and states that he has detected a piece of a needle weighing only one seventh of a grain broken into the finger; but no minute details of this or of any other case are given, and on this account the following clear and minute description of the method used for determining the presence, position, depth, and length of a needle broken into the foot, may be interesting.

A lady in walking about her bed-room ran a needle into the great toe; on searching the floor a part of a needle was found, and there was every reason to believe, from the sensation, that the pointed end was broken off and left in the toe. Unsuccessful endeavours were made to extract it. About two months afterwards, doubts were expressed whether any needle was in the foot; a scientific friend offered to settle that question, and, if it were there, to say in what part of the toe it then had its place, and what was its direction, its depth, and probable length.

In a letter to Dr. Bence Jones, who communicates the paper to the Royal Medical and Chirurgical Society, Mr. Smee says: "The following were the means employed. A fine sewing-needle was well magnetized, and a piece about an eighth of an inch long was broken off. Then a filament of cocoon silk, about an inch long, had one end attached to the middle of the little magnet by a touch of soft cement, and the other end to the handle of a camel's-hair brush. In this way a minute test magnetic needle was obtained, which pointed well under the earth's power, and could easily be brought near any part of the toe. The toe being examined by this needle, showed occasional deflexions of the latter, which, being imperfect as indications, still seemed to imply that a piece of the broken needle was there, but rather deeply situated. Now the means of increasing these indications, and making them tell their story more perfectly, was applied, and upon the following principles. A piece of unmagnetized needle will affect a little magnet at a distance very feebly compared to the same piece magnetized. The unmagnetized piece will affect either end of the test-needle alike, whereas the magnetized piece will affect the opposite ends in different ways, attracting one and repelling the other.

A piece of unmagnetized needle can be magnetized at a distance by a magnet of sufficient power, and as well whilst in the toe as out of it; also its magnetic state can be reversed, if the inducing magnet be reversed; and further, it can by management be unmagnetized, and when without magnetism it is not rendered magnetic whilst the lines of force of the inducing magnet are perpendicular to it. Upon these principles I started, employing (as inducing magnet) a single bar horse-shoe magnet, made by Logeman, with the poles so far apart that I could introduce my thumb between them. The magnet was brought up to the toe, then taken away, and the part examined by the indicating needle. The indication was not stronger than before. Hence one of two conclusions was probable; either there was no piece of needle there, or its position was at right angles nearly to the line joining the poles of the inducing magnet where it had been applied So the inducing magnet was employed again in a different position, and now the indicating needle told its story beautifully, showing that a little magnet had been formed within the toe, which by its power attracted one end of the needle and repelled the other. A few more trials with the inducing magnet showed in what position it was able to act most strongly on the hidden needle, and then the position of the magnetic axis of the former indicated the position of the latter. Reversing the position of the inducing magnet instantly changed the magnetism of the buried needle, and then that point of the skin which before attracted the marked end of the indicating needle repelled it strongly, and attracted the other end. It was beautiful to see when the indicating needle was carried round a given spot on the surface of the toe, how one end always pointed towards that spot, and even moved, as if striving to dip down to it. Thus the direction of the piece of needle, and the locality of one end, were clearly shown. Then came the question, where may the other end of the piece be, and what is the probable length of the whole?

"'By carrying the indicating needle about the toe, it was found that the opposite end of the imbedded needle, though it exhibited an influence over the indicator, did not come near the opposite surface of the toe, but was buried deep in the flesh. Hence the broken needle pierced deep, and almost perpendicularly into the flesh, but did not come near the other side. I guess it, therefore, to be about the third of an inch long. Presently we may tell if the needle travels, and which way it is going.'

"Hence—1st. The *presence* of an imbedded needle may most surely be determined, by making it into a magnet by induction, and then testing for it by a minute suspended magnet.

"2d. The *direction* of an imbedded needle may be determined by marking the direction in which the inducing magnet makes the strongest magnet. When the length of the imbedded needle lies in the line joining the poles of the inducing magnet, it becomes the strongest magnet.

"3d. The *depth* of the imbedded needle may be determined by the intensity of the action near the surface of the skin.

"4th. The *length* of the imbedded needle may be guessed when the direction is known, and the amount of magnetic action at the

part of the surface opposite to the spot where the needle entered is observed.

"Lastly, the *motion* of the imbedded needle may be determined by carefully noting, from time to time, the changes that require to be made in the position of the inducing magnet in order to give to the hidden needle the strongest possible magnetism."

On a case of Excision of the Head of the Femur and Floor of the Acetabulum for Caries combined with Pelvic Abscess. By HENRY HANCOCK, Esq., F.R.C.S., Surgeon to Charing Cross Hospital. ('Lancet,' 18th and 25th April, 1857).

This is the first case in which the operation of excision of the head of the femur has been undertaken with the avowed object of removing the floor of the acetabulum, and of relieving pelvic abscess. It is a case which, according to ordinary rules, ought never to have been undertaken. Thus, the head of the bone remained *in situ*, the acetabulum was extensively diseased and perforated, and there was pelvic abscess. Mr. Hancock shows that the cotyloid cavity has been more or less implicated in the majority of cases in which the head of the femur has been excised, and in this way, among others, he attacks the established rule that the cotyloid cavity must be free from disease, and the amount of pelvic disease but trivial in cases where this operation is undertaken. Thus, in 18 out of the 26 operations performed in this country, including his own, the acetabulum afforded more or less evidence of departure from its natural and healthy condition. At the time of operation—

In 2, there was scarcely a trace of acetabulum.

In 3, the acetabulum was found filled with a fibro-gelatinous mass.

In 6, the gouge was employed for caries.

In 1, the acetabulum was said to be enlarged by absorption.

In 1, the acetabulum is described as being deprived of cartilage.

In 1, it was perforated.

In 1, it was partly obliterated.

In 1, the patient died two years afterwards, with sinus above Poupart's ligament, copious discharge, pelvic caries, and perforated acetabulum. And

In 1, the patient died three months after the operation from profuse suppuration, which was found to extend into the pelvis through an opening in the cotyloid cavity.

"After all," says Mr. Hancock, "it is only in a very few instances that the surgeon can tell beforehand what is the condition of the cotyloid cavity; but supposing he can do so—that a patient presents whose case imperatively calls for operation in all respects but that the acetabulum is extensively diseased, are we to abandon this patient to his fate, and allow him to die in agony? Is it not rather an additional reason for performing the operation? since the greater the amount of disease the smaller the chance of recovery, whilst the value of an operation does not consist in the facility of its execution, but in the urgency of the symptoms and the extent of disease and

suffering it is capable of removing. It is very true that in many instances the bones of the pelvis appear to possess a wonderful power of reparation. The cases operated upon show this; but if we look through the list, we find three in which the patients died sooner or later from profuse suppuration, and wherein the acetabula were found perforated after death. It would seem therefore much the safer proceeding entirely to remove the doubtful portion of the acetabulum than to leave it behind or merely scrape it with a gouge.

"Mr. Coulson and Mr. Henry Smith have laid considerable stress upon perforation of the acetabulum as an insuperable barrier to the operation, but if I am able to prove that so far from being so, the operation may be performed, even under these apparently unpromising circumstances, with safety and benefit, it will, I am sure, be agreed, that its application to such cases eminently enhances its value, since it affords a prospect of cure to an amount of disease hitherto considered irremediable. Presuming always that the disease is confined to these limits, that the viscera and spine are healthy and the lungs free from tubercles, I do not understand why a pelvic abscess, depending upon hip disease or caries of the pelvis, should not be cured as well as any other abscess connected with caries elsewhere, provided it can be reduced to the same condition. The amount of caries is often comparatively small, and though capable of causing excessive discharge, is confined to the limits of the acetabulum, and the part perforated.

"In pelvic abscess depending upon hip-disease, the head of the bone, or what remains of it, is often retained in the acetabulum after perforation of the latter has obtained; the matter thus escaping from the joint, the same lull in the constitutional symptoms takes place, as is so frequently observed in spontaneous dislocation. Such abscesses are not cured, because the matter, if left to itself, cannot find a depending exit, and the cause, or caries, is allowed to remain. I cannot understand how so celebrated an anatomist as Dr. Knox could have asserted that the pelvic portion of the hip-joint is beyond the reach of excision. In cases requiring it, the pelvis may be reached at almost any point. Mr. Syme has recently removed necrosed bone from the tuber ischii, and in another case from the ascending ramus of the ischium and inner margin of the pubic arch. The ilium is separated from the peritoneum and fascia by the iliacus internus. The ilium, ischium, and pubis, opposite the joint and beyond, are separated from the abdominal and pelvic cavities and viscera by pelvic and obturator fasciæ, the obturator internus, and levator ani muscles The matter in pelvic abscess is outside the obturator fasciæ, between it and the bone separating the former from the latter, and causing a considerable interval between the two, so that the whole of the cotyloid portion of the pelvis, and for some distance beyond, may be removed without any risk of injury to the pelvic contents. But it may be asked why the spontaneous openings of a pelvic abscess cannot effect a cure equally with one made through the acetabulum? We find the answer in the shape of the pelvis, for when a patient lies on his side, the cotyloid portion is the most depending, so that when a free opening is made in that situation, and the patient is turned

over on that side, not only does the matter find a free and depending exit, but the contents of the pelvis gravitating upon the abscess, tend to consolidate the parts, obliterate the cavity, and assist the cure. I need scarcely observe that before undertaking these operations, we should make a very careful examination of the patient, and, as far as possible, convince ourselves of the non-existence of disease elsewhere. We must assure ourselves that the pelvic abscess has been preceded by hip-disease; is connected with it, and not with disease of the spine, with psoas, or iliac abscess. One point of diagnosis, therefore, in these cases, is the pre-existence of hip-disease. Another is the locality at which the spontaneous openings usually occur. When the matter is poured into the pelvis through the perforation of the acetabulum, it falls, as we have seen, between the obturator fascia and the bone, and in consequence of the firm attachment of the former to the falciform margin of the great sacro-sciatic ligament, the matter cannot reach the skin in that direction, but gravitating posteriorly by the rectum, it presents by the side of the anus, simulating fistula. It occasionally bursts into the rectum itself or the vagina, and it has been known by its pressure upon the neck of the bladder to interfere greatly with the process of micturition; but the more frequent locality, as far as my experience serves me, is in the outer part of the groin, near the anterior inferior spinous process of the ilium, probably induced by the position maintained by the patient at this stage of the disease. This is a point upon which I am induced to attach some importance, as affording a means of diagnosis between pelvic and psoas abscess, as the latter usually present more internally, nearer the middle of the groin. The existence of openings externally in the neighbourhood of the joint will also assist, as pelvic abscess depending upon hip-disease very rarely, if ever, takes place without having been preceded by suppuration about the joint itself.

"When the opening occurs in the groin, the existence or non-existence of perforation of the acetabulum may be ascertained by a probe slightly curved; by introducing it into the opening, and directing its point downwards and outwards, it may be passed through the perforation into the joint; and I have also observed that, whereas in psoas abscess the probe can be more readily passed backwards and upwards, in these cases it takes the opposite direction—downwards and backwards.

"In some cases of hip-disease, an abscess forms in the pelvis before actual perforation of the acetabulum occurs, though, in all probability, depending on the disease going on in that cavity. In such cases, should the connection be clearly made out, and circumstances warrant operative interference, the floor of the acetabulum may be readily perforated by a trephine, and any amount of the acetabulum removed by a metacarpal saw. So, likewise, in those cases in which there is neither pelvic abscess nor perforation, nor extensive disease of the acetabulum, I cannot see the objection to the operation."

It is indeed difficult to see what objection there can be to the operation after reading Mr. Hancock's case—a case which will occupy an important place in the annals of operative surgery.

Case.—Timothy D—, æt. 14, admitted, under my care, to Charing Cross Hospital, in July, 1856, with disease of the hip-joint. Five years before, observing a swelling in the groin, he attended at the Middlesex Hospital, but got worse, and was made an in-patient. He remained there five months. Two years afterwards, abscesses formed around the joint; and, eighteen months ago, he first came under my care at Charing Cross Hospital, where he remained three months, when he left apparently cured. He continued able to walk for ten months, when he was attacked with severe pain in the knee, which increased so much, that upon his application I again admitted him into the hospital. Shortly afterwards, abscesses formed around the hip-joint, opening behind the trochanter, and also low down on the back of the thigh; and, subsequently, an abscess burst in the groin; and a probe introduced into this opening passed readily into the pelvis. He, in the course of time, became so emaciated and worn out with the profuse discharge, night sweats, loss of appetite, &c., that it was evident he could not long survive if something were not done for him. Great prostration and cough supervened, and his sputa became streaked with blood. I, therefore, requested Dr. Willshire to examine his lungs. He did so, and pronounced them free from any cause contraindicating an operation. Having as far as possible ascertained that the disease was confined to the hip-joint and pelvis, I examined the inside of the latter with a probe through the opening in the groin, and then discovered perforation of the acetabulum. Under these circumstances, I concluded that the pelvic abscess, and the boy's condition generally, were due to hip-disease, and that by removing the head of the femur, and the floor of the acetabulum, I might not only get rid of the diseased bone, but also by affording a free and depending opening for the discharge of the matter, the pelvic abscess might be approximated to the condition of an ordinary abscess, and thus the patient be saved; and I accordingly proposed to my colleagues to remove the head of the femur and floor of the acetabulum, and so much around it as the extent of the disease required, the patient having agreed to undergo whatever I might advise. On the 6th of December, 1856, the patient having been submitted to the influence of chloroform, and placed upon his left side on the table, I, assisted by Mr. Canton, Mr. Hird, and Mr. Barwell, commenced the operation by making a crucial incision over the great trochanter of the femur, extending about three inches beyond in all directions. The flaps having been reflected, a circular incision was carried round the head of the bone, which remained in its cavity, cutting through the glutæi, the muscles inserted into the digital fossa, the pectineus, &c., and opening the capsular ligament. Upon examination by the finger, the neck of the femur was discovered to be so much involved in the disease that I decided upon cutting through the bone immediately below the great trochanter; after which, the head of the bone was removed without difficulty. When this was done, the acetabulum was found to communicate by two openings at its deepest part with the pelvic abscess. I endeavoured to excise the floor of the acetabulum with the bone-nippers, but could not, and therefore with a metacarpal saw I cut round the acetabulum, removing the whole of the diseased bone, exposing the thickened pelvic fascia, and leaving a large opening for the escape of the matter from the pelvic abscess. It has been stated in another journal that I gouged away the several portions of acetabulum. This is an error; I did not use that instrument at all. The flaps were then brought together, and united by sutures, except opposite and below the opening in the acetabulum, where they were kept separated by lint. A splint, extending from the armpit to the foot, was next applied, as the leg could now be straightened without difficulty, and the patient returned to his

bed. Very little blood was lost during the operation, and no vessels required tying.

The operation was followed by almost instant relief of his constitutional symptoms. He was a little sick for the first forty-eight hours from the chloroform, but otherwise his course has been one of uninterrupted improvement. His countenance soon became cheerful and free from anxiety; his night sweats ceased in two days from the operation. On the third day, the wound in the groin was entirely healed. The discharge from the wound made at the operation, which for the first few days was very abundant, gradually became thicker and diminished in quantity until the present time, when it does not amount to a teaspoonful during the twenty-four hours. He was able to sit up in bed for the first time for nearly a year with his knee straight fourteen days after the operation. In three weeks, he dressed himself, and sat in a chair by the fire. In five weeks, he was able to walk with a crutch and a stick; at the end of eight weeks, however, he imprudently dispensed with both crutch and stick; inflammation ensued, followed by abscess external to the pelvis. This, however, has subsided, and he is now progressing steadily, gaining flesh and strength, at the present time being able to walk in the park daily.

A Report on some of the more important points in the treatment of Syphilis. By Mr. Holmes Coote, Assistant-Surgeon to St. Bartholomew's Hospital. (8vo, London, Churchill, 1857. pp. 141.)

Mr. Holmes Coote is far from regarding venereal diseases in that very serious light which some would make us believe—as the parent, that is, of an endless variety of ailments, and as poisoning successive generations almost interminably. In his opinion, on the contrary, "the poison in general wears itself out, except in the very severe cases, and fortunately the transmission of syphilis from parent to offspring is comparatively uncommon." The special points which Mr. Coote endeavours to prove are, that syphilitic sores owe their distinctive characters to the action of the poison on particular tissues, —that there is but one poison which may produce any of the varieties of secondary, or constitutional symptoms,—and that the occurrence of bubo, whether suppurating or not, has no influence upon the constitutional effects.

The report is exclusively devoted to Mr. Coote's personal experience.

III.

REPORT ON PHYSIOLOGY.

On the proximate cause of Functional Action. By JAMES HINTON, Esq. ('Med. Chir. Review,' July, 1856).

Mr. Hinton divides the actions which are recognised in animal bodies into two classes, the nutritive, and the functional; the latter he distributes into nervous action, muscular contraction and secretion. Of these he remarks that they are accompanied by a decomposition, or retrograde chemical change, more or less complete, in the tissues, and are thus placed broadly in contrast with those processes which effect the growth of the body. "No explanation is attempted of the phenomena of nutrition; accepted as facts, they form the bases on which it is sought to found a consistent theory of the cause of functional activity."

The view taken is, that in living structures the chemical affinities of the elements are coerced or held in a state of tension, which may be illustrated by the bent condition of a spring, or the compression of vapour, and that the functional power of the body is due to this state of chemical tension. So that the animal body in this respect presents a precise analogy to a machine in which power is stored up by tension, or coercion of any force or tendency. The existence of a controlled or subjugated tendency to chemical change in living bodies is the orig n of all the capacity for functional action which they display, and the disintegration of their tissues is not a 'result' or 'condition' of their activity, but rather the moving spring and source of that activity itself. In this respect the organic and inorganic worlds obey a common law. Organization gives a capacity for action only by virtue of the resistance it presents to the chemical forces; these chemical forces acting under definite limits and in connection with various structures, being the true sources of all functional activity. A living body is a divinely made machine, involving in its *working* no other principles than those which we every day apply and see to regulate the entire course of nature. For the inorganic world furnishes abundant instances of the same balancing of forces resulting in a similar activity or capacity for action. *Irritability*, in so far as it denotes a capacity for responding to stimuli, exists in every form of matter in which there is found the same

powerful tendency to change of state with which it is associated in living bodies. The iodide of nitrogen, gunpowder, and solutions which crystallize upon a touch are referred to. In all such instances the action is immediately due to pre-existing and restrained tendencies to change of state, so that they furnish an exact parallel to the view proposed of the animal functions. Adopting this view an immediate simplicity results; sensibility and contractility no longer having any place as properties of living structures apart from their known tendency to chemical change.

An application of these views is made to the three classes of functions, respectively. It is argued that the conditions under which the functional activity is elicited, indicate the permission of a chemical change under the influence of pre-existing tendencies, and the force resulting from such change, operating through the diversified tissues, is the natural agent to which the various functions must be referred. In other words, the tissues are in a state of unstable equilibrium, which the functional stimuli overthrow. The action of the heart is thus referred to. "In its muscular structure or nervous ganglia, the chemical and vital forces are so balanced that they assume a state of alternating activity. When, by the process of nutrition, the chemical affinity has been accumulated to a certain amount, it overpowers the vital resistance, and that chemical change which is the cause of contraction, ensues. And the same series of changes continually recurs, because the vital state is constantly renewed. The heart may be said to wake and sleep with each recurrence of its beat."

The great advantage which results from this view of function is the simplification of effects in the conception of the vital force itself. One whole division of what under other views is considered as vital action, being thus transferred to the domain of chemical agency, the idea of the vital force stands out clear and distinct before the mind as the peculiar molecular action which forms and nourishes the living body. That is its nature; that its entire scope. Thus, by resistance, it accumulates chemical force, and furnishes the conditions under which the functions—motion, nervous action, secretion—exhibit themselves as the results of chemical affinity.

On the relative Temperature of Arterial and Venous Blood. By Mr. Savory, Demonstrator of Anatomy and Operative Surgery at St. Bartholomew's Hospital, &c. (Pamphlet, 1857.)

From a series of very carefully conducted and conclusive experiments, it appears that, so long as the natural pulmonary circulation continues, the blood returns from the lungs to the left side of the heart warmer than when it was sent there from the right side, and that, consequently, *arterial is warmer than venous blood.* It appears, also, that the temperature of arterial blood rapidly falls to that of venous blood when the pulmonary circulation is interfered with, and the respiratory changes diminished.

Now there can be no doubt that this question, whether arterial or venous blood is the warmer, is one of considerable importance, for it

must lie at the very foundation of any correct theory of animal heat. It is impossible to reconcile the fact that arterial is warmer than venous blood with the most current theory of the production of heat—that which removes its seat from the pulmonary, and places it exclusively in the systemic capillaries. The admission of the fact that venous is cooler than arterial blood, turns one's mind from the modern theory in the direction of the older, and now almost forgotten one. But although incompatible with the assumption that the only change which the blood undergoes in its temperature during its circulation through the lungs is a loss due to evaporation, it is by no means at variance with the belief that heat is generated during its circulation through the systemic capillaries also.

The doctrine most completely in harmony with ascertained facts is that which refers for the source of heat (1) to the action of oxygen inspired upon the blood as it circulates, and (2) to those changes between the blood and the tissues which are involved in nutrition.

"That blood returning from the systemic capillaries is cooler than when it entered them, only proves that more heat is there removed from the blood than is produced in it by the chemical changes connected with nutrition. If it were not for these, and doubtless the changes still going on in the blood itself also, supplying, to a great extent, the demand for heat, the blood would be much more cooled during its passage than it is.

"The following experiment will probably illustrate what is meant: it was practised on an arm a short period after death :—

"Having secured a stopcock directed downwards in the brachial artery just above the elbow, I connected it, by means of an elastic tube, with a reversible syringe. In the tube immediately above the stopcock, I placed the bulb of a thermometer, and another in the median basilic vein. By immersion in warm water, the temperature of the limb having been raised to 100°, I injected water of 100°, as indicated by the thermometer in the tube, through the arm, until it escaped freely from apertures in the superficial veins in front of the elbow. After the injection had been continued very rapidly for some time, the thermometer in the vein varied from 85° to 90°, thus indicating a loss of from 10° to 15° during its circulation through the arm. After some time, the water returned less freely, and the limb became tense and distended.

"Again : having passed a thermometer through the arteria sacra media into the aorta of a dead dog, and another into the inferior vena cava through either the renal or common iliac vein, and then having raised the body by immersion in warm water to the temperature of the living animal, I have rapidly injected from above water varying from 100° to 110° through the posterior portion of the body, allowing it to escape freely by the vena cava. After a short time, there was always a difference between the two thermometers of 10° or more.

"This experiment is advanced as an illustration only. It is far too rough and imperfect to prove anything; but, so far as it goes, it shows how much heat may be abstracted from the circulating fluid by the tissues when no compensating production of it ensues. Such an experiment, if more skilfully repeated, would probably be attended with less loss, but always, beyond doubt, with much more than naturally occurs."

At present there is no evidence upon which we can safely explain altogether the increase of temperature in the lungs, though it is undoubtedly the result of the changes which the blood there undergoes. Certainly it cannot, as Dr. Davy supposed, be referred altogether to the union of oxygen with the blood. Thus Mr. Savory performed several experiments, from which the general conclusions are these :

"1. That when venous blood was treated in this manner with oxygen, its temperature was usually raised from 1° to 1½° or 2°.

"2. That when venous blood was treated in a similar manner with hydrogen or carbonic acid, its temperature was as frequently raised, and generally to the same extent.

"3. That similar experiments upon arterial blood usually yielded the same results.

"4. That, in all cases, the increase of temperature seemed to be the result of the agitation. By shaking water in a similar manner with air, a small quantity of mercury being present, I have often raised its temperature, though to a less extent.

"I have ascertained from other experiments that the increase of temperature is not imparted by the hand or from any external source."

Mr. Savory's paper will well repay a very careful perusal.

On the Non-poisonous Effects of Transfusing different kinds of Blood. By Dr. Brown-Sequard. ('American Journal of Medical Sciences,' July, 1856.)

In some recent experiments at the Ecole Pratique in Paris, Dr. Brown-Séquard exhibited a dog into whose jugular vein he had the day before injected a mixture of blood drawn from two pigeons and a rabbit, and to all appearance the animal was perfectly well. He also performed certain experiments which show that MM. Prevost and Dumas are wrong in maintaining that blood is poison and not life in the veins of an animal, if it be taken from an animal of a different species. All these experiments show that the blood is poison, even when taken from the same animal, if it is injected without due attention having been paid to its aëration; and Dr. Brown-Séquard thinks that the fatal results in MM. Prevost and Dumas' experiments were due, either to air having got into the vessel, or to the blood not having been properly aërated, or else to too much blood having been injected at once. Convulsions and speedy death were the invariable consequence of the injection of non-aërated blood.

These experiments will be given at length presently, and in the meantime we are indebted for these scanty particulars to Mr. David R. Walter, who mentions them in a letter to the accomplished editor of the 'American Journal of Medical Sciences.'

On the influence of Light upon the Irritability of the Nerves. By Dr. W. Marme and Dr. J. Moleschott. (Schmidt's 'Jahrb.,' No. 8, 1857.)

These investigations go to show that the irritability of the nerves is greater in frogs which have been kept in the light than in animals of the same kind which have been kept away from the light. Every precaution was taken to procure animals of the same size and condition, and, with the exception of the light, the subsequent treatment was precisely similar. The irritability of the nerves was estimated by the activity of the current in the ischiatic nerve, and the galvanometer employed (that of Du Bois-Reymond) had 24,000 coilings. Twenty-five frogs which had been in the dark were compared with twenty-five frogs which had been freely exposed to daylight. In the frogs which had been kept in the light the nerve-current deflected the needle in the first instance to 28·5°, in the second instance, to 20·1°; but in the frogs which had been excluded from the light, the primary deflection of the needle was only 23·5°, the secondary only 15·6°.

On extirpation of the Cœliac Plexus. By Dr. S. Samuel. (Wien Med. Whnsch 30, 1856; and Schmidt's 'Jahrb.,' vol. 93, No. 2, 1857.)

Dr. Samuel's experiments were performed on rabbits, dogs, and cats, and the results were very unmistakeable. In all cases, the effect of extirpating the plexus was to produce extreme hyperæmia of the intestinal mucous membrane—so extreme as to surpass even that of cholera. This hyperæmia, which was in no way connected with peritonitis, was confined to the upper part of the intestines. In all cases, also, the effect of the operation was to increase the amount of intestinal secretion, though not to the extent met with in violent diarrhœa or cholera.

Investigations on the Spinal Cord. By Dr. Brown-Sequard. (Amer. Quart. Journ. of Med. Sciences, July, 1856.)

Dr. Brown-Séquard believes that he is able to draw two series of conclusions from his elaborate experimental investigations upon the spinal cord.

I. *Conclusions relative to the distribution of the fibres of the posterior nervous roots in the spinal cord.*—1. The fibres of the posterior nervous roots appear to pass in part to the posterior fasciculi, and probably also, but in a very small number, to the lateral fasciculi.

2. The fibres of the posterior roots which pass to the posterior fasciculi, appear to proceed, in part, towards the brain, and, in part, in the opposite direction; so the one portion are ascending, and the other descending.

3. The fibres of the posterior roots which pass to the lateral fasciculi, seem also to be composed of two series, the one ascending, the other descending.

4. In the posterior grey cornua, there appears to be, also, ascending and descending fibres derived from the posterior roots.

5. In the posterior and lateral fasciculi, as well as in the posterior grey cornua, the descending fibres appear to be more numerous than the ascending.

6. The ascending and descending fibres derived from the posterior nervous roots appear, after passing for a short distance, to leave the posterior and lateral fasciculi, as well as the posterior grey cornua, to penetrate the central grey substance.

II. *Conclusions relative to the transmission of sensitive impressions in the spinal cord.*—1. On their arrival at the spinal cord the sensitive impressions pass by the posterior fasciculi, the posterior grey cornua, and probably, also, by the lateral fasciculi.

2. In these different portions of the cord, the sensitive impressions mount or descend, and, after a short course, towards the brain or in the opposite direction, they quit these portions of the cord to enter the central grey substance, in which, or by which, they are finally transmitted to the brain.

The fifth conclusion of the first series is one which, according to Dr. Brown-Séquard, is the least positively established of the six. In saying that descending fibres appear to be more numerous than the ascending, he wishes only to be understood as offering the probable explanation of the hyperæsthesia of those portions of the body which are behind the point at which the posterior fascicula of the cord have been divided transversely. He is aware that there are two other explanations that may be given of this phenomenon which possess perhaps equal probability. Thus, it is possible that it is a property of the descending fibres to possess a greater amount of sensibility than the ascending; if so, it is not necessary to explain the fact referred to by supposing that there should be more descending than ascending fibres. It is very certain that there is a special cause of the hyperæsthesia experienced, after a division of the posterior fasciculi, in the parts below that division, and consequently the descending fibres should cause more pain than the ascending in the experiments of Dr. Brown-Séquard, because the properties of the descending fibres cannot be tested until after the posterior fasciculi, or one of them, have been divided.

It is possible, then, that even though inferior in number, the descending fibres may cause a greater amount of pain than the ascending. Let the question be settled as it may in reference to the relative number of the different fibres, an important anatomical and physiological fact results from the facts reported in this memoir,—it is, that the posterior nervous roots of the cord, in the same manner as the great root of the trigeminus in the bulb, send into the cord sensitive descending fibres, or those for centrifugal transmission. Anatomy must decide as to the *number:* with respect to the question of the *existence* of these fibres, anatomy has already confirmed what vivisections so positively teach. We have seen, and the most skilful microscopists have likewise seen, descending fibres proceeding from the posterior nervous roots.

On the cause of the Rhythmic Motion of the Heart. By Mr. PAGET, Assistant Surgeon to St. Bartholomew's Hospital. (Proceedings of the Royal Society, May 28, 1857).

The following quotations will explain better than we can do in any words of our own, the opinions of the author upon this very interesting subject. They are taken from the Croonian Lecture recently delivered before the Royal Society:

"In all organic processes there is as minute a regulation of time as there is of quantity, or shape, or quality of matter. Timework is not a singular characteristic of quickly rhythmic organs; it is a rule of life; and its rate in each organism is neither determined, nor beyond certain limits alterable, by external conditions, or by any appreciable qualities of weight or composition (as are the time-relations of inorganic masses); but is determined by properties inherited, and inherent in the very nature of the organism, and is least alterable by external conditions in the highest organisms.

"But though the general law of chronometric nutrition (if I may so call it) may be evident, yet it may be objected by some, that it is proved only for such nutritive processes as are long-continuous and cumulative; and that it is an unwarranted assumption to think of a rhythmical or frequently interrupted nutrition. To which objection the answer may be, that whether we regard a rhythmic nutrition as the cause of rhythmic motion or not, we are obliged to hold such a method of nutrition as a fact. For we can be nearly certain that in the heart, as in other muscular, or any other parts, the successive impairments and renovations of composition, which constitute the process of nutritive maintenance, are severally accomplished during the successive periods of action and of repose, all exercise being attended with impairment of composition, such as can be repaired only during repose. Now the only repose of the heart's muscles, and I suppose of its nervous system also, is in the brief intervals between their successive actions; and in these intervals, and, therefore, with a rhythmic nutrition co-ordinate with its rhythmical action, the heart structures must recover from the changes suffered in their actions. Whether, then, as a cause, or as a consequence, where there is rhythmical action there must be corresponding rhythmical waste and repair; for we cannot reasonably suppose that the heart, or any other similarly acting organ, has, as a special prerogative, an exemption from the law of impairment in or by exercise: such an exemption is, indeed, inconceivable.

"Now if rhythmic nutrition be thus proved as a necessary attendant of rhythmic action, it must be regarded as the cause, not the consequence, of the action; for in all cases nutrition has precedence of other actions in organized bodies; and the time-regulation of nutrition is a general and principal fact, and is a cause, not a consequence, of many phenomena which we trace in other organs than the heart, and many of which are attended with time-ordered movements.

"I suspect that, to many, that which will seem most difficult of acceptance, is the belief that in so quick rhythmic actions as that of the mam-

malian heart (for example), or that of cilia, there can be a corresponding quickness of alternation of the progressive and retrogressive changes which essentially constitute nutrition. It must be admitted that, when we watch these movements, they appear, at first sight, very unlike anything that can result from nutritive changes, in which we are apt to think of a certain deliberation and quietness. But all rhythmic movements are not thus rapid; and when we watch the actions of a heart reduced to move only once in two or three minutes (as a frog's may be by ligature around the venous sinus), the appearance is like nothing more than it is like that of a process of nutritive changes, in which the structures gradually reach a climax of instability, and then quickly change. Whatever value then there may be in the appearance of a rhythmic action as an indication of its cause, it might be adduced on either side of the inquiry.

"But let me add, that the nutritive changes to which I here refer, do not involve the supposition of any rapidly successive making and unmaking of the structures of the rhythmic organ, whether the heart or any other. We have probably held too much of the making and unmaking of elemental parts as essential to their maintenance by nutrition. In the modelling of parts during development and growth, such complete changes probably occur; but in mere maintenance of parts there is no evidence of their frequent or ordinary occurrence, and to assume it is contrary to the fact, that we rarely find any rudimental structures among the perfect ones. In the most active muscles of the adult, for example, I doubt whether a rudimental or developing fibre could be found; we have sufficient chemical evidence of a constant change of material in them, but no evidence of an equal or parallel change of structure. And so in the blood; the change of material is very rapid, but the change of structures, which we may in some measure estimate by the proportion of white or rudimental blood-cells, is probably slow.* And again, in the secreting glands, excepting those of the skin and the breasts, we have no evidence, and, I think, no sufficient reason to believe, that in all cases the gland-cell-walls dissolve or burst in the act of secretion, so as to need the entire new formation of fresh cells. For we find in most of the active glands no considerable number of either rudimental or degenerate cells; and the observations of Ludwig and Rahn on the secretion of saliva indicate, as many other facts do, that in ordinary secretion (which is the ordinary nutrition of glands) the cell-contents, gradually transformed, flow out through the persistent cell-walls.

"Nutritive maintenance, then, probably requires nothing more than molecular substitution. Atoms even of the refuse substance may be passing out, and atoms of the renewing substance passing into places among the structures of a comparatively persistent framework. Cell-walls or their analogues may be long-lived, while their contents are undergoing continual mutation. Such a process of molecular interchange and passage is, indeed, visible in the absorption of oil through the epithelial cells and villi of the intestines; and this is probably only a coarse example of the ordinary manner in which cells change their contents in

* The very small quantity of iron, in proportion to the quantities of the other constituents of the blood-cells, found in the excretions, is another indication of the comparatively slow waste of the red blood cells, and may suggest, besides, that in nutritive maintenance there is not an equal mutation of all the component substances of a structure.

the nutritive processes. Changes like these may well consist with the quickest rhythmic action.

"I would thus, then, conclude as to the most probable explanation of the rhythmic action of the heart:—

"1. In the vertebrata it is due to the time-regulated discharges of nerve-force in certain of the ganglia in and near the substance of the heart, by which discharges the muscular walls are excited to contraction.

"2. In invertebrata, the corresponding pulsatile movements of hearts or vessels are probably independent of nerve-force.

"3. The time-regulated rhythmic action, whether of the nervous centres or the independent contractile walls, is due to their nutrition being rhythmic, *i. e.* to their being, in certain periods, by nutritive changes of composition, raised, with regulated progress, to a state of instability of composition, in their decline from which they discharge nerve-force, or change their shape, contracting.

"4. The muscular substance of the heart in vertebrata, governed in its rhythmic action by appropriate nervous centres, has a rhythmic nutrition of its own, corresponding and co-ordinate with theirs; the impairments of its structure during action being repaired in repose.

"5. Rhythmic nutrition is a process in accordance with the general laws of organic life, very many organic processes being composed of timely-regulated alternate action and inaction, or alternate opposite actions, *i. e.* being rhythmical, with larger or shorter units of time; and all organic processes being chronometric, *i. e.* ordered according to laws of time as exact, and only as much influenced by external conditions, as are those relating to weight, size, shape, and composition."

Vocal Gymnastics; or a Guide for Stammerers, and for Public Speakers and others who suffer from certain minor peculiarities of Utterance, with an Appendix of Cases. By G. F. Urling, Esq. (12mo, London, Churchill, 1857, pp. 89).

In a very small compass, we have here much really important matter—matter which is not a little interesting to the physiologist, and which is more than interesting to those whose sufferings it is intended to remedy. The formation of the consonants, the relation between vowels and consonants, and some other points in the physiology of speech, are explained with much clearness and simplicity; and we are mistaken if the view taken does not, in many instances at least, recommend itself to the physiological critic. Stammering, in accordance with the principles laid down concerning speech, is shown to be dependent upon, (1) Mismanagement of the breath; (2) Faulty vocalization; and (3) Faulty articulation, and the mode of cure educed is logical and intelligible. That the mode of cure is successful appears from the letters contained in the Appendix.

On the Digestion and Absorption of Fatty Substances without the aid of the Pancreatic Juice. By M. Colin, of Alfort. (Mon. des Hôpitaux, April 25, 1857).

After tying the excretory duct of the pancreas, and making the pancreatic juice to flow away from the animal, M. Colin obtained from the thoracic duct of an ox not less than forty litres of perfectly emulsionized chyle within twenty-four hours, from which a large amount of fat was procurable by means of ether; and hence it appears that the pancreatic juice is not absolutely essential to the digestion and absorption of fat. This experiment, we believe, has been repeated by M. Berard.

On some points in the Anatomy of the Liver of Man and vertebrate animals, &c. By Dr. Lionel S. Beale, Physician to King's College Hospital, Professor of Physiology in King's College. Illustrated with sixty Photographs. (8vo, London, Churchill, pp. 80, 1857.)

This volume is a reprint of certain lectures, delivered at King's College, which appeared originally in one of the weekly journals. For some time past, Dr. Beale has devoted especial attention to the anatomy of the liver; it is certainly necessary to read his book to learn what is to be known upon this interesting subject. That his labours have not been without fruit will appear from the following summary:

The livers of all invertebrate animals are penetrated in every part by two sets of channels, which alternate with each other. One series, *portal canals*, contains a branch of the portal vein, hepatic artery, and hepatic duct, *interlobular;* and the other series, *hepatic venous canals,* is occupied by a single branch of the hepatic vein, *intralobular.*

Division of the organ into Lobules.

The vessels and ducts ramifying in the portal canals are ultimately distributed in such a manner that they serve to divide the organ into little masses, and thus map out spaces, or *lobules*, each of which contains all the structural elements of the organ, and may be regarded as an *elementary liver.*

In the intervals between the fissures by which the portal vein, artery, and duct are conducted to the lobule, its capillary vessels and its secreting structure are continuous with those of adjacent lobules.

The size and form of the lobules differ much in different animals; but their essential structure is the same in all, excepting the pig, in the Polar bear, according to Muller, and in the Octodon Cummingii (one of the rodents), according to Hyrtl.

In these exceptional cases the liver is divided into a number of distinct and separate lobules, each provided with a capsule of its own,

just as the kidney of the porpoise and of the seal is divided into a number of separate renules.

In the *pig* each lobule is provided with a separate fibrous capsule of its own, and is, therefore, completely isolated from its neighbours. Branches of the portal vein, artery, and duct run between them, and give off branches to contiguous lobules. In the intervals between the fibrous capsules areolar tissue can frequently be demonstrated.

In all cases, upon a section, the lobule is seen to be bounded externally by branches of the vein, artery, and duct, and in the centre is situated a small branch of the hepatic vein.

Areolar Tissue in Portal Canals.

In the liver of the human subject, and in that of vertebrate animals generally, with the exceptions above mentioned, the lobules are not separated from each other by any fibrous partition, and there is no areolar or fibrous tissue, or prolongation of Glisson's capsule between them, or in their interior.

The vessels at their entrance into the liver, and as they run for some distance in the larger portal canals, are surrounded with much areolar tissue; but the disposition of this texture about the vessels of the liver is very similar to its arrangement about the larger vessels distributed to other organs.

Intimate Structure of the Lobule.

The *lobule* itself is composed of a solid capillary network, and of another network composed of a very delicate tubular membrane, in which the liver cells are contained.

These networks mutually intertwine with each other.

The capillary network is directly continuous with the smallest *interlobular* branches of the portal vein, distributed upon the circumference of the lobule on the one hand, and with the small *intralobular* branch of the hepatic vein arising in its centre upon the other. The vessels of the network converge toward the centre of the lobule.

Small branches of the *artery* open into the venous capillaries of the lobule, near its circumference, and the diameter of these small branches is considerably less than that of the venous capillaries into which they open; the former not more than the 1-4000th part of an inch in diameter, the latter about the 1-600th.

In all cases, the blood, enriched with constituents recently absorbed from the intestine, flows with a gradually increasing rapidity from the circumference of the lobule towards its centre, while the bile flows in a precisely opposite direction.

Of the Liver Cells and of the Tubular Network in which they lie.

The liver-cells lie within a tubular network of basement membrane, which separates them from the walls of the capillaries. In many cases, however, these thin membranous tubes cannot be separated, and are, no doubt, incorporated with each other.

The cells are not attached to the basement membrane of the tube, but lie in its cavity. Among them free oil globules and granular matter are often found. Usually, there is only room for one row of cells, but sometimes two or more lie across the tube. In the embryos of mammalia, in young animals generally, and in fishes, there is room for several rows to lie transversely across the tubes of the cell-containing network.

The cells near the margin of the lobule take the most active part in the formation of bile. The secretion passes along the tubes in the slight interstices between the cells and the basement membrane, and coloured fluid can be forced along these same interstices in a direction the opposite to that in which the bile flows during life, and, therefore, at a great disadvantage. The amount of space is in great measure determined by the quantity of blood in the vessels, and it is liable to great alteration.

The cell-containing network is directly continuous with the most minute ducts, which ramify at the circumference of the lobule, and it terminates in the centre by loops, which lie close to the intralobular vein.

Of the Finest Ducts.

The tubes of the cell-containing network are many times wider than the narrow thin-walled ducts with which they are directly continuous.

The smallest *ducts* are lined with a very delicate layer of epithelium, composed of *flattened cells* of a circular form, contrasting remarkably with the large *secreting cells*, which are not arranged in any definite manner within the tubes of the network.

The tubes of the cell-containing network are about 1-1000th of an inch in diameter, or more, but the finest ducts are commonly not more than 1-3000th, and they are often seen even less.

The smallest ducts in some animals branch very freely, and the branches communicate with each other at intervals. In others they pursue a long course without branching, and in the pig they form an intimate network upon the surface of the lobule. In fatty livers of the pig, however, this ductal network often contains liver-cells loaded with oil globules.

As the ducts increase in size they are provided with a fibrous coat, and the epithelium in their interior becomes columnar.

The *interlobular ducts* do not anastomose.

Sacculi in the Coats of the Ducts.

When the fibrous coat reaches a certain degree of thickness it contains numerous little cavities, or *sacculi*, arranged entirely round the tube in the pig and in most animals, but forming two parallel rows, one on either side of the duct, in the human subject.

These little sacculi often communicate with each other in the coats of the duct. The smaller branches of the duct also anastomose frequently, either in the coats of the duct or just external to them.

The sacculi appear to serve the purpose of bringing the bile in the thick-walled ducts into closer relation with the vessels which surround them, and especially with the branches of the artery which are distributed to their coats.

Of the Vasa Aberrantia and of the arrangement of the Vessels around them.

In the transverse fissure of the human liver and some others, and in the large portal canals, are found some peculiar branches of the duct, *vasa aberrantia*, with numerous sacculi on their walls, which anastomose with each other and form a network.

In the same localities in the human subject, and in the gall-bladder, a very peculiar arrangement of the vessels occurs. Both arteries and veins form a network, and each branch of the artery is accompanied with two branches of the vein, one on either side of it.

A contribution to the Physiology of Saccharine Urine. By Dr. George Harley. (Medico-Chir. Rev., July, 1857.)

The investigations contained in the present paper are of great value, as enabling us to obtain a satisfactory answer to the question—By what means is the secretion of sugar excited? The opinion of M. Bernard is, that in a healthy animal the secretion of sugar is excited by a reflex nervous action, and that this reflex action originates in the stimulus given by the respired air to the pulmonary branches of the pneumogastric nerve. He believes, in fact, that at each act of inspiration the tender filaments of the pneumogastric nerve distributed in the lungs receive from the inhaled gases a stimulus which is transported through the trunks of these nerves to the brain, and reflected from the nervous centre along the spinal cord and splanchnic nerves to the liver. Dr. Harley does not contest the idea that the secretion of sugar may be excited through this channel; but he asks, if this be the actual mechanism of the process. How is it that while the respiration, and consequently the stimulus, continues at about the same rate during the entire day, the secretion, which is said to be the result of the stimulus, varies at different times to so great an extent? Dr. Harley, moreover, is of opinion, and we think with good reason, that if the pneumogastric is the nerve which carries the stimulus to the brain, to be from thence transmitted by the spinal cord and splanchnic nerves to the liver, *the point of departure of the stimulus is most probably in the liver itself, and that the cause of the reflex action may originate in the stimulating effect of the portal blood upon the hepatic branches of the pneumogastric nerve.* If, for example, the stimulating effect of the blood of the portal vein be imitated as much as possible by injecting into that vessel substances such as alcohol, ether, chloroform, methylated spirit, or ammonia, the liver is excited to secrete an excess of sugar, and the animal operated upon is for a time rendered diabetic. He says:

"I injected ten cubic centimètres of sulphuric ether, mixed with thirty

cubic centimètres of water, into one of the branches of the portal vein* of a full-grown Newfoundland dog, half-an-hour after he had been fed. When he rose up after the operation he appeared intoxicated, and staggered a little as he moved about. This effect, however, soon disappeared, and in a few hours the animal looked as if nothing had been done to him. In two hours after the injection was made I passed a catheter into his bladder, but did not obtain sufficient urine to enable me to satisfy myself whether it contained sugar. Some hours afterwards, when I had obtained enough urine, I found that it readily reduced the copper in Barreswil's liquid, thus indicating the presence of saccharine matter. To assure myself that this effect was not due to the presence of any other substance, I boiled the urine in order to coagulate the albumen, of which it contained a little, then evaporated it almost to dryness, dissolved the residue in boiling alcohol, and filtered. The filtered liquid was next evaporated to drive off the alcohol, and an aqueous solution made. On testing the latter for sugar with the sulphate of copper solution, its presence was clearly indicated. Although by this method the existence of saccharine matter was rendered almost undeniable, I still wished to convince myself of its presence by some other means. The urine which the dog passed the next day was therefore fermented, and carbonic acid gas and a trace of alcohol were obtained, thus placing beyond a doubt the existence of sugar in the urine. In consequence of the dog breaking his chain and escaping, I am unable to state how long he remained diabetic; but he was certainly in that condition forty-eight hours after the injection of the sulphuric ether.

"The following case, of which I shall speak very briefly, proves the presence of sugar in the urine until the third day after the operation: A very large dog (the largest I ever saw) was treated in the same way as the preceding one, but he appeared to suffer much more from the operation. His urine was so loaded with bile that I was forced to decolorize it before testing it for sugar with the tartrate of potash and copper, which, however, it readily reduced. I also fermented the urine, and was able to convince myself of the existence of saccharine matter in it until three days after the injection had been made.

"In another case I injected nine cubic centimètres of ether, mixed with thirty cubic centimètres of water, into the portal vein of a small dog. He became insensible, and continued so during a few minutes. Twenty-four hours afterwards he was killed by section of the medulla oblongata, and in his urine the presence of sugar was detected, both by the fermentation and by the copper test.

"The following case shows how ammonia has the same power as ether by causing the liver to secrete an abnormal amount of saccharine matter:

"Into the portal vein of a good-sized dog, in full digestion, I injected fifteen drops of liquor ammoniæ, diluted with forty cubic centimètres of water. In twenty hours afterwards, on the animal being killed, his bladder was found enormously distended with urine, which not

* The experiment is very easily performed by using a sharp-pointed syringe, which can be pushed with facility through the coats of one of the large mesenteric veins.

only reduced the copper in the liquid of Barreswil, but fermented most rapidly.*

"I have on several occasions repeated the experiment with ammonia, and have not yet met with a single unsuccessful case. Attempts with chloroform, on the other hand, are not invariably successful, as they sometimes result in the death of the animal, especially if the dose be considerable, as the following example proves:

"Into the portal vein of a large sheep-dog I injected a mixture of three grammes of chloroform, ten cubic centimètres of ether, and fourteen cubic centimètres of water. He died three hours after the operation. Notwithstanding this untoward circumstance, I found that the urine remaining in his bladder after death contained a certain amount of sugar. In operating with chloroform, it is best to use only a few drops, as then the animals seem to suffer but little inconvenience.

"In another experiment I injected into the portal vein of a small dog ten cubic centimètres of a liquid composed of equal parts of alcohol and water. Two hours afterwards I examined the urine, and found that it contained sugar, but in small quantity. As I had great difficulty in obtaining the urine of this animal, I ceased making any further observations on him.

"Into the portal vein of another dog, of the Skye-terrier breed, I injected ten cubic centimètres of the common methylated spirit, diluted with thirty cubic centimètres of water, six hours after he had eaten a full meal. For a few minutes after the operation he appeared to be in toxicated; but this effect soon disappeared, and on the following day he seemed perfectly well. When he was killed, his bladder was found distended with pale-coloured urine, which contained a considerable amount of sugar, as was seen by the quantity of copper it reduced, and the facility with which it fermented.†

"It may be here mentioned that all dogs so treated vomited after the operation, from the irritation, no doubt, of the pneumogastric nerves.

"These experiments are selected from a number of others, which it is quite unnecessary to cite, as the results obtained were identical. From the total of my experiments upon this point, I conclude—firstly, that a flow of saccharine urine can be induced by means of stimulants introduced into the portal circulation, even in animals that have been fasting during twenty-four hours; and secondly, that the introduction of these stimulants sometimes produces albuminuria and an increased discharge of bile, as well as of saccharine urine."

There exists only one argument against the theory, that the secretion of sugar is due to a reflex action originating in the stimulating effect of the portal blood upon the hepatic branches of the pneumogastric nerve; namely, that while section of the pneumogastric nerves in the neck at once arrests the secretion of sugar, division of the same nerves below the point at which they send branches to the

* This and the preceding experiment I had the honour of performing at the College of France, before a commission appointed by the Society de Biologie, and consisting of Profs. Bernard, Robin, and Verdeil.

† Some of the gentlemen who attended my class last summer may perhaps recollect this experiment. It was performed on the dog with an artificial gastric fistula.

lungs is not followed by a similar result. This, indeed, is the very fact upon which Bernard founds his theory of the reflex action originating in the lungs.

In answer to this objection Dr. Harley says—

"Upon a cursory view of the subject, it might be considered equally valid as an objection to the former, and as a commendation to the latter hypothesis. If we examine the point of argument, however, we shall find that the mere fact of the disappearance of sugar from the liver after section of the cervical, and not after division of the thoracic pneumogastrics, is in reality of little value, since it can be readily accounted for on other grounds. The liver ceases to secrete sugar in all cases where animals are subjected to severe operations,* whether of the pneumogastric or of any other nerve. Indeed, whenever a febrile state of the system is set up, the glucogenic function of the liver becomes immediately disturbed; section of the cervical pneumogastrics is moreover one of the severest operations to which an animal can be subjected; it is not, therefore, in the least degree surprising, that the saccharine secretion should be arrested. The same thing occurs after a variety of severe operations on different parts of the body, entirely unconnected with the nerves supplying the liver. Besides this, the slow asphyxia to which animals with divided cervical pneumogastrics are subjected, is sufficient of itself to account for the disappearance of sugar from the liver.†

"On the other hand, since division of the pneumogastric nerves below the lungs in general entails neither the death of the animal, nor gives rise to any symptoms of asphyxia, it is not in the least surprising that the glucogenic function of the liver should in that case suffer but a slight derangement- Another fact in favour of the statement, that the disappearance of the sugar from the liver after section of the cervical pneumogastrics is simply dependent upon the severity of the operation, is to be found in the observation that an equal amount of injury done to the pneumogastric below the lungs is followed by a similar result. If, for example, the nerves are ligatured instead of divided, the animals frequently die, and in those cases no sugar is found in the liver. On examining the livers of two dogs, one of which died within sixteen, the other within twenty hours after ligature of the pneumogastrics at their entrance into the abdomen, I found that the saccharine secretion had been arrested, just as happens when the pneumogastrics are divided in the neck, and probably from an identical cause, the severity of the operation.

"Thus it is seen that there really exists no valid objection to the idea of the glucogenic function of the liver being excited by means of a reflex action, originating in the hepatic organ. On the other hand, there is a very important objection to the view of its originating in the lungs. For, as has already been observed, the air entering the lungs must present the same amount of stimulating action throughout the whole day; and yet the result of that supposed action is found to vary at different times.

* See some interesting remarks upon this point at p. 360 of Bernard's Lectures.

† In proof of this statement I need but quote a single sentence from Bernard's Lectures. He says, "Si encore on asphyxie un animal lentement, les angoisses de l'agonie font encore disparaître le sucre." (vol. i, p. 360.)

"If, then, we are unprepared to relinquish entirely the idea of the intervention of nerve agency, and to suppose that the portal blood excites the secretion of sugar by a direct stimulating action upon the tissue of the liver, we must, in absence of a better explanation of the fact, adopt the opinion that the glucogenic function in a healthy animal, under ordinary circumstances, is called forth by the stimulating action of the portal blood upon the hepatic branches of the pneumogastric nerves."

Dr. Harley is evidently as much inclined to ascribe the secretion of the sugar to direct action of the stimulus upon the tissue of the liver, as to a reflected nervous action.

These experiments are of extreme interest in explaining to us how errors in eating or drinking, by affecting the liver through the portal circulation, may produce diabetes mellitus in persons predisposed to the disease; and so also is an experiment performed upon himself by the author, which we quote, together with the accompanying remarks:

"About five years ago, at a time when I was much occupied in studying the physiology of diabetes, I regularly tested my urine twice a day, and on one occasion I found it to contain a small quantity of sugar. On the day in question I had partaken freely of asparagus salad; and thinking that this might perhaps be the cause of the presence of sugar, I determined to try the effect of a greater quantity. The following day, the sugar having entirely disappeared from the urine, I again partook of the same salad both in the morning and afternoon. In the evening, on testing the urine, I found very distinct indications of sugar. As the observation was to me one of great interest, I determined to make some further experiments on the subject, in order to discover how many hours this state of saccharine urine would continue. During two days I ate large quantities of the asparagus salad, taking care to have it made as stimulating as possible with vinegar and pepper. The result was far beyond my expectations; for instead of the sugar disappearing from the urine in a few hours after I had ceased partaking of the diet in question, it continued to be secreted during several days, until I at last became very much alarmed, lest the disease had been permanently induced. On the evening of the fourth day the sugar had almost entirely disappeared; but on the fifth it returned in increased quantity—so much so, that a drop of urine falling on the boot left a distinct white spot. I could not account for the recurrence of the disease, as I had been particularly careful in my diet during the two previous days.

"I have mentioned this experiment, because it appears to me that if a flow of saccharine urine be induced in a healthy person, as I consider myself to be, by disordering the digestion and over-exciting the liver, it is very probable that a cause insignificant in itself, but operating upon a predisposed constitution, might tend to produce the disease. Sugar in the urine has been found after eating cheese and other indigestible substances. It is worthy of remark, that Dr. Jessen, of Dorpat, has rendered horses diabetic by feeding them with hay damaged by moisture. M. Leconte has also found sugar in the urine of dogs after he had administered to them the nitrate of uranium. Several other substances have the same effect, and I have no doubt but that a great number more stimulants will be afterwards found to produce similar results. I cannot refrain

from mentioning with what pleasure I perused a communication of M. Bernard's, entitled, 'On the Influence of Alcohol and Ether on the Secretions of the Digestive Canal, of the Pancreas, and of the Liver,' read before the Société de Biologie.* M. Bernard, instead of putting the alcohol and ether, as I had done, directly into the portal vein, introduced them, by means of a long œsophagus tube, into the duodenum of dogs, and allowed them to be absorbed through the walls of the intestines into the portal circulation. The result, as might *à priori* have been anticipated, was identical with what I had previously obtained. M. Bernard, in fact, found that six cubic centimètres of alcohol mixed with an equal amount of water was sufficient to excite the liver to secrete a large quantity of sugar, even while the animal was fasting. With ether employed in a similar manner, he obtained no less successful results. It would be very interesting and important to ascertain if the simple introduction of alcohol into the stomach would produce the same effect. It is possible that in some cases it might fail to do so, on account of its being so acted upon by the gastric juice that it had lost its stimulating properties before it reached the portal circulation. The experiment is, however, one worth making, as in many works on diabetes, drunkards are said to be peculiarly liable to the disease."†

The rest of the paper is occupied by considerations tending to show that the destruction of sugar in the animal economy is accomplished, not simply in the capillaries of the lungs, but during the transit of the blood through the capillaries generally.

On the decomposition of Uric Acid in the Animal Body. By Dr. Neubauer. ('Annalen d. Chem. u. Pharm.,' xcix, August, 1856; and Schmidt's 'Jahrb.,' xciv, No. 4, 1857.)

Having first ascertained the composition of the urine of rabbits living under ordinary circumstances, Dr. Neubauer added to the daily food from two to three grammes of uric acid. Before the experiment no uric acid was present in the urine; after the experiment the quantity of urea was increased from 1·3 grammes to 2, 2·5, and even to 4·2 grammes. The inference is, that uric acid is transformed within the œconomy into urea and carbonic acid. This experiment was repeated several times, and always with similar results. Other experiments were tried in which a larger quantity of uric acid was given, and in these cases the urine, in addition to the increased quantity of urea, contained some uric acid, and traces of oxalic acid.

* 'Gazette Médicale de Paris,' Mai 10, 1856.

† Some interesting remarks upon the effects of diet are to be found in Dr. Garrod's Gulstonian Lectures. See 'British Medical Journal,' April 18th, 1857.

On certain Puerperal Phenomena occurring in Bitches independently of Fecundation. By M. DELAFOND. ('Archiv. Gén. de Méd.,' June, 1857.

M. Delafond relates the history of certain bitches, not fecundated when on heat, in which, at the time when parturition would have taken place if they had been fecundated, that is between the sixtieth and sixty-third days, all the phenomena which precede or follow parturition were manifested—the breasts becoming turgescent and secreting milk, the vagina and vulva becoming tumefied and covered with a viscid mucous secretion. In one case the animal evidently expected the arrival of puppies, and arranged her bed accordingly; and not only so, but a few days later she suffered from milk-fever until a puppy was brought to her. Nor did this puppy seem to suffer from any want of food.

After the reading of this paper, MM. Leblanc, Roche, and Moreau referred to observations of a similar nature which had fallen under their own notice; and in this way several facts were brought to light which tend to confirm the correctness of Harvey's observations upon doe-rabbits, and of Buffon's upon bitches.

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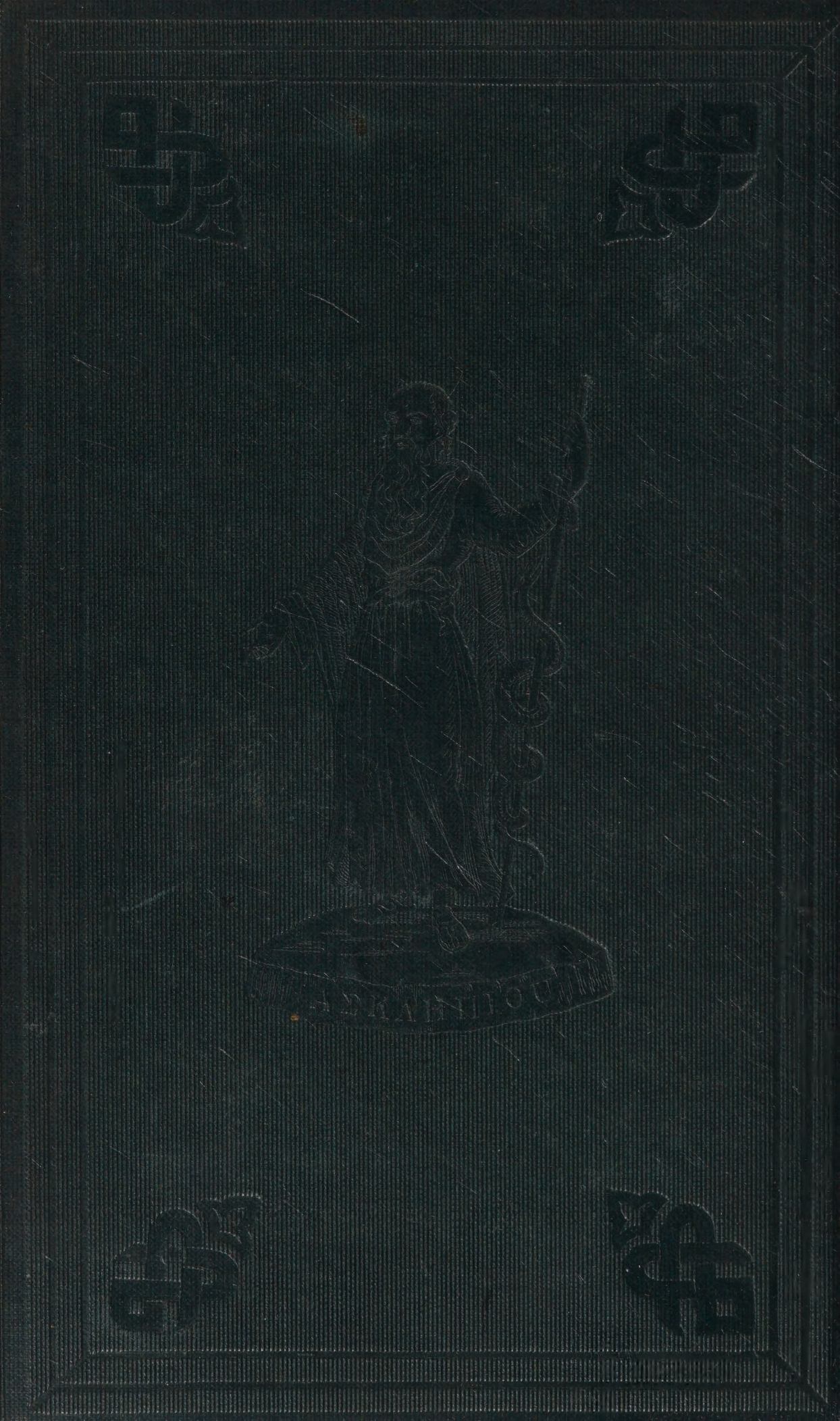
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